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The Graduate School
College of Education

THE INFLUENCE OF LEARNING TECHNOLOGIES ON THE ROLES OF WORKPLACE LEARNING AND PERFORMANCE PRACTITIONERS

A Dissertation in
Workforce Education and Development

by

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The purpose of this study focused on how learning technologies have impacted workplace learning and performance (WLP) practitioners’ roles. Several aspects investigated when gathering research data included: (a) defining the term learning technology, (b) identifying the learning technology changes that have occurred, (c) uncovering how these learning technologies have changed or enhanced the many competencies that WLP practitioners need to master in order to be successful, (d) determining how the WLP practitioner role has changed over the past 10 years, and (d) discussing how organizations are responding to and supporting LT changes. The findings of this research shed light on why and how learning technologies continue to change and show how these changes impact the WLP practitioner role. Findings include the need for a more defined definition of learning technology, better understanding of interactive learning technologies, an understanding of new competencies WLP practitioners must master, and a clearer understanding of additional roles WLP practitioners fulfill such as strategist, data analyst, change agent, and project manager.
# TABLE OF CONTENTS

LIST OF TABLES ........................................................................................................ vi

LIST OF FIGURES ....................................................................................................... vii

ACKNOWLEDGEMENTS .............................................................................................. viii

Chapter 1 INTRODUCTION ......................................................................................... 1
  Historical Perspective ............................................................................................... 1
  Pilot Study .................................................................................................................. 2
  Problem ..................................................................................................................... 9
  Purpose of Study and Research Questions .............................................................. 10
  Significance of Study ............................................................................................... 10

Chapter 2 LITERATURE REVIEW ........................................................................... 12
  Historical Perspectives ............................................................................................ 12
    Defining the Terms *Role* and *Role Transitions* ............................................... 12
    Transitioning Roles and New Competencies .......................................................... 14
  Philosophical Changes ............................................................................................ 14
    Pedagogical Versus Andragogical ......................................................................... 15
    Objectivism Versus Constructivism ..................................................................... 15
    Fixed Versus Flexible ............................................................................................ 16
    Teacher Versus Coach ........................................................................................... 17
  Previous Studies Sponsored by ASTD ..................................................................... 17
  Advantages and Limitations of Competency Studies .............................................. 21
  Key Trends Driving Competency Changes ............................................................. 25
  Comparison of Old and New Competencies ........................................................... 27
  A Review of the ASTD Competency Models ......................................................... 29
  New Learning Strategies Due to Changes in Learning Technologies ................... 33
  Role and Learning Environment Changes Stemming from Learning Technology ............................................................................................................ 34
  The Reshaping of Terminology .............................................................................. 35
  Examples of Virtual Learning and Technologies .................................................. 37
  Prediction .................................................................................................................. 38
  Summary .................................................................................................................. 39

Chapter 3 METHOD .................................................................................................. 40
  Purpose of the Study ............................................................................................... 40
  Restatement of Research Questions ....................................................................... 41
  Design of Study ....................................................................................................... 41
  Population and Sampling ....................................................................................... 44
Population..................................................................................................................44
Sampling......................................................................................................................45
Instrumentation, Data Collection, and Data Analysis ..............................................47
   Instrumentation........................................................................................................47
   Data Collection.........................................................................................................47
   Data Analysis............................................................................................................48
Work Breakdown Structure .........................................................................................49

Chapter 4 RESULTS....................................................................................................52

Restatement of Study’s Purpose and Research Questions......................................52
Profile of Participants .................................................................................................52
Method.........................................................................................................................55
Results..........................................................................................................................56

Research Question (RQ2): What LT changes have occurred over the past five years? 58
Research Question (RQ3): How do these LT changes affect the competencies needed by WLP practitioners? 59
Research Question (RQ4): How do these LT and competency changes affect the day-to-day roles of WLP practitioners? 63
Research Question (RQ5): How are organizations responding to and supporting the LT and competency changes? 65

Summary of Findings .................................................................................................67
Implications for the WLP Field ................................................................................67
Additional Research Needed by the WLP Field .......................................................70

REFERENCES ...........................................................................................................72

APPENDIX ..................................................................................................................79
LIST OF TABLES

Table 1-1 First-Order Categories and Second-Order Themes Identified .................. 4
Table 1-2 Direct Quotations from Interviews by First- and Second-Order Themes ... 6
Table 2-1 Prior ASTD/ATD Competency Studies and Key Findings ...................... 18
Table 2-2 Advantages and Limitations of Past Studies ....................................... 21
Table 3-1 Work Breakdown .................................................................................. 50
Table 4-1 Participants Profiles ............................................................................. 54
Table 4-2 Advantages and Limitations of Past Studies ....................................... 63
LIST OF FIGURES

Figure 2-1. ASTD Competency Model (2004). ................................................................. 30
Figure 2-2. ASTD Competency Model (2013). ................................................................. 32
Figure 2-3. Types of Learning Environments. ................................................................. 35
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Chapter 1

INTRODUCTION

Historical Perspective

Advancements in learning technology (LT) along with the declining costs associated with purchasing such technology are changing how workplace learning and performance (WLP) professionals deliver training and fulfill their role requirements. In particular, LTs are allowing WLP professionals to develop training programs that can be delivered anytime and in any place. Rothwell, Sanders, and Soper (1999, p. 9) define WLP as the integrated use of learning technology and other interventions for the purpose of improving individual, group, and organizational performances. WLP uses a systematic process to analyze performance and respond to individual, group, and organizational needs by balancing human, ethical, technological, and operational considerations (p. 5).

This study focuses on the LTs used in WLP, paying particular attention to the LTs utilized by WLP professionals to meet organizations’ strategic training and development needs and how these LTs have changed the day-to-day roles of WLP professionals. The Association for Learning Technology defines learning technology as the broad range of communication, information, and other related technologies that can be used to support learning, teaching, and assessment. The relationship between LTs and WLP professionals is discussed in the ASTD Competency Study: The Training and Development Profession Redefined (2013). The study’s authors state that a WLP professional “identifies, selects,
and applies a variety of learning technologies, adapts learning technologies, and matches the appropriate technology to the specific learning opportunity or challenge at hand” (p. 99).

Although this statement was used by the Association for Talent Development (ATD) researchers in a 2013 study to describe the relationship between WLP professionals and LTs, a review of the existing literature suggests there remains a lack of information about the specific technologies that are captured by the LT definition. A more robust understanding of the term learning technology needs to be established in order to assist WLP professionals in understanding what constitutes a LT, how to use LTs, and how LTs impact the roles of WLP professionals. As LTs become more and more central to WLP practitioners’ roles, tasks, and responsibilities, WLP practitioners must be able to understand and master the emerging competencies required by the LTs. To better understand the LTs and competencies currently used by WLP practitioners, a pilot study was undertaken.

**Pilot Study**

During the Fall of 2015 a pilot study for a qualitative methods course was completed at The Pennsylvania State University. This study was intended to be exploratory, with the expectation of completing an additional study for this dissertation. The pilot study focused on the overall roles of the WLP practitioners and the changes that had occurred within these roles within the past five years; it also considered the reasons for these changes and the ways in which the practitioners’ organizations were recognizing
and supporting these changes. Participants in this pilot study included three WLP practitioners from the central Pennsylvania chapter of the ATD. These participants were randomly selected from the chapter’s membership directory and represented three different industries: financial services, consulting, and marketing integration.

Hour-long interviews were completed with the practitioners during this pilot study. Each interview was structured as a series of 25 open-ended questions. The questions pertained to the individual participant’s role, education, competencies, perceived individual-level changes in the role of WLP practitioners, reporting structures, and the support the participant received from the executive management of his or her organization. These questions were kept broad in the hope that the participants would feel free to provide diverse viewpoints. A sample question is: “What is one of the major challenges you face in your role as a WLP practitioner?” As the interviewer, I allowed myself to ask additional questions based on interesting comments made by the interviewees. Likewise, the interviewees were given the opportunity to ask questions of me.

A grounded-theory technique was used to analyze the data collected. Strauss and Corbin (1998) pointed out that grounded theory is used to uncover and understand what is behind a phenomenon. In this pilot study the researcher sought to review what is known about changes in the WLP field and how these changes affect the roles of WLP practitioners. An analysis of the participants’ responses to the 25 open-ended interview questions was thus performed. After transcribing and analyzing the interview responses from all three participants, line-by-line coding was completed. Line-by-line coding helped the researcher see subtle patterns in the participants’ descriptions of their everyday
work experiences. The initial coding was followed by a focused coding process. Charmaz (2014) stated that:

Focused coding means using the most significant and/or frequent earlier codes to sift through and analyze large amounts of data. Focused coding requires decisions about which initial codes make the most analytic sense to categorize your data incisively and completely. It also can involve coding your initial codes. (p. 140)

This focused coding was then organized into observed themes. Biddle et al. (2001) suggested that coded data may be organized so that the data units (statements and sentences, among other units) are clustered into common themes; these themes are essentially the same as codes. This means that similar units are grouped together into first-order themes and distinguished from units with different meanings. This organizational strategy was adopted in the pilot study with the first-order categories, which were then grouped together into second-order themes as shown in Table 1-1.

Table 1-1
First-Order Categories and Second-Order Themes Identified

<table>
<thead>
<tr>
<th>First-Order Categories</th>
<th>Second-Order Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology types used</td>
<td>Using learning management systems</td>
</tr>
<tr>
<td></td>
<td>Using storyboards</td>
</tr>
<tr>
<td></td>
<td>Utilizing platforms</td>
</tr>
<tr>
<td></td>
<td>Offering a subscription (telephone)</td>
</tr>
<tr>
<td>Major changes in role because of increased learning technology</td>
<td>Being a jack-of-all-trades</td>
</tr>
<tr>
<td></td>
<td>Having dual roles as trainer and developer</td>
</tr>
<tr>
<td></td>
<td>Needing to have a stronger IT background</td>
</tr>
<tr>
<td></td>
<td>Understanding more about technology</td>
</tr>
<tr>
<td>Current competencies needed</td>
<td>Using/having good communication skills</td>
</tr>
<tr>
<td></td>
<td>Being a developer</td>
</tr>
<tr>
<td></td>
<td>Being more technically inclined</td>
</tr>
<tr>
<td></td>
<td>Establishing priorities</td>
</tr>
<tr>
<td>Types of training</td>
<td>Offering remote training</td>
</tr>
<tr>
<td></td>
<td>Using standup training</td>
</tr>
<tr>
<td></td>
<td>Offering virtual training</td>
</tr>
</tbody>
</table>
First-Order Categories | Second-Order Themes
---|---
Technology types used | Using learning management systems
| Using storyboards
| Utilizing platforms
| Offering a subscription (telephone)

When reviewing the first-order categories and second-order themes, I recognized that several of the themes that had emerged needed to be explored in more detail. For example, one of the questions asked was: “What major changes in your role have occurred due to changes in technology?” Some of the first-order categories that needed to be explored in more detail were “being a jack-of-all-trades,” “having dual roles as a trainer and a developer,” and “understanding more about technology.”

Additional research was needed to help uncover the true meanings of terms and responses given by participants. For instance, what does the term “jack-of-all-trades” actually mean? What does “understanding more about technology” mean? The responses given to the question about current required competencies were similarly vague. What does “being a developer” mean? What does “being more technically inclined” mean? Clarifying participants’ responses from the pilot study was necessary to obtain a clearer understanding of role and competency changes. A follow-up study was thus created to provide a robust understanding of the emerging phenomenon captured in the pilot study. Displayed in Table 1-2 are quotations about first- and second-order themes from interviews.
<table>
<thead>
<tr>
<th>Second-Order Theme</th>
<th>Direct Quotations from Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using a learning management system (LMS)</td>
<td>“switched vendors for our LMS” (AH)</td>
</tr>
<tr>
<td></td>
<td>“We pursued …for us it’s an LMS management system. We’ve always had some sort of LMS” (AH)</td>
</tr>
<tr>
<td></td>
<td>“We do have an LMS system and that would be the most critical component. So, if there is any new compliance and hosting security that would be covered by our department, but not me specifically” (AU)</td>
</tr>
<tr>
<td>Using a storyboard/storyline</td>
<td>“Storyline, um, and Captivate” (AU)</td>
</tr>
<tr>
<td></td>
<td>“difficult to hire someone as a[n] instructional designer in us at our company if they don’t have any storyboarding for online training” (AU)</td>
</tr>
<tr>
<td></td>
<td>“Storyboarding is just so different from reading your notes for a classroom” (AU)</td>
</tr>
<tr>
<td>Utilizing platforms</td>
<td>“Certainly the technologies, the learning technologies. There are so many social platforms for people to utilize now” (LT)</td>
</tr>
<tr>
<td>Offering a subscription (telephone)</td>
<td>“We do subscription-based training where we instead of giving an online training we use a new software so it’s actually on a telephone system next to your Outlook” (AU)</td>
</tr>
<tr>
<td>Second-Order Theme</td>
<td>Direct Quotations from Interviews</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td><strong>Theme 2: Major changes in role because of technology</strong></td>
<td></td>
</tr>
<tr>
<td>Being a jack-of-all-trades</td>
<td>“pulled a million different ways” (AH)</td>
</tr>
<tr>
<td></td>
<td>“definitely being able to be a jack-of-all-trades” (AH)</td>
</tr>
<tr>
<td>Having dual roles as trainer and developer</td>
<td>“We have dual roles as trainer and developer” (AU)</td>
</tr>
<tr>
<td></td>
<td>“In the department I am one of the project managers, instructional designers” (AU)</td>
</tr>
<tr>
<td></td>
<td>“As the instructional designers you really see the project through from beginning to finish anyways” (AU)</td>
</tr>
<tr>
<td>Understanding more about technology</td>
<td>“Keep educating management about technology changes necessary for remote training” (AH)</td>
</tr>
<tr>
<td></td>
<td>“You need to be equipped on Word, PowerPoint” (AU)</td>
</tr>
<tr>
<td></td>
<td>“Definitely technology” (AU)</td>
</tr>
<tr>
<td></td>
<td>“We are continuously looking at the latest and greatest tools we need” (AU)</td>
</tr>
<tr>
<td>Needing to have a stronger IT background</td>
<td>“definitely need that technical background” (AH)</td>
</tr>
<tr>
<td></td>
<td>“Technology changes have been the biggest” (AH)</td>
</tr>
<tr>
<td><strong>Theme 3: Current competencies needed</strong></td>
<td></td>
</tr>
<tr>
<td>Using/having good communication skills</td>
<td>“Having open communication and setting realistic expectations” (AH)</td>
</tr>
<tr>
<td>Second-Order Theme</td>
<td>Direct Quotations from Interviews</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Being a developer</td>
<td>“Being able to communicate tactfully and clearly” (AH)</td>
</tr>
<tr>
<td></td>
<td>“do a lot of heavy writing; our biggest concern is how well-written and well-spoken” (AU)</td>
</tr>
<tr>
<td></td>
<td>“Because otherwise when we are developing curriculum you can just overwhelm people with so much information” (AU)</td>
</tr>
<tr>
<td>Being more technically inclined</td>
<td>“Continuously learn, you have to continuously go out there and get the different certifications” (AH)</td>
</tr>
<tr>
<td></td>
<td>“Giving me more of the technical development background that I need that can really help with the online training” (AH)</td>
</tr>
<tr>
<td></td>
<td>“We need to continuously learn the new technologies” (AU)</td>
</tr>
<tr>
<td></td>
<td>“I think something like adult learning that would be critical. I think design, sound instructional design course because even if you are just up training and you are training other people’s content, you need to know what good design looks like” (LT)</td>
</tr>
<tr>
<td>Establishing priorities</td>
<td>“You have to know how to prioritize and know what to focus on” (AH)</td>
</tr>
<tr>
<td>Offering remote training</td>
<td>“moved more towards remote training and online training” (AH)</td>
</tr>
</tbody>
</table>

**Theme 4: Types of training**
<table>
<thead>
<tr>
<th>Second-Order Theme</th>
<th>Direct Quotations from Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using standup training</td>
<td>“We’ve migrated away from using any flash-based technology because they are not mobile friendly” (AH)</td>
</tr>
<tr>
<td></td>
<td>“What I do is develop and design training primarily online training or in-person instructor-led training materials for clients” (LT)</td>
</tr>
<tr>
<td></td>
<td>“I also do some in-person training where I’m up in front of a group training teaching” (LT)</td>
</tr>
<tr>
<td>Offering virtual training</td>
<td>“So, for an online training you might have an interaction” (AU)</td>
</tr>
<tr>
<td></td>
<td>“the need to understand what the differences are when you are working with individuals in front of you and easier to engage and if the individuals are remote and you don’t really see them and you can’t see their reactions and knowing all the online strategies you can use and what works best for each situation” (LT)</td>
</tr>
</tbody>
</table>

**Problem**

Past studies have highlighted several changes in WLP professionals’ roles. Yet researchers still lack a clear understanding of the specific changes that have occurred because of LTs, how these continual changes in LTs have altered the roles of WLP practitioners, and how these role changes have affected the competencies WLP professionals are required to master. In order to gain insight into these questions, the interview questions used in the follow-up study were framed more narrowly than those of
the pilot study. For instance, a major change in the terminology was made. In the pilot study, the word “technology” had been used. This word may have been too vague and caused generalizations to appear in the respondents’ answers. In the follow-up study, the more specific phrase “learning technology” was used.

**Purpose of Study and Research Questions**

The purpose of the follow-up study was to identify and explore specific changes in LTs, describe how these LT changes affect the day-to-day roles of WLP practitioners, describe the competencies that may have changed because of these role changes, and uncover how organizations are responding to these changing roles. Guiding this study were the following research questions:

- **Research Question (RQ1):** How do WLP practitioners define learning technology?
- **Research Question (RQ2):** What LT changes have occurred over the past five years?
- **Research Question (RQ3):** How do these LT changes affect the competencies needed by WLP practitioners?
- **Research Question (RQ4):** How do these LT and competency changes affect the day-to-day roles of WLP practitioners?
- **Research Question (RQ5):** How are organizations responding to and supporting the LT and competency changes?

**Significance of Study**

This study assists WLP practitioners in identifying specific types of LTs that have changed and those LT changes that have made the most dramatic impact on WLP.
practitioners’ roles. Additionally, this study assists WLP practitioners in knowing which competencies linked to LTs are most important for the practitioners to master and why. Lastly, findings from this study allow WLP practitioners and organization leaders to understand which LTs are needed within their workforces, as well as how organizations need to budget for and support such LT needs.
Chapter 2

LITERATURE REVIEW

The review of literature in this qualitative research study focuses on different areas of LT, drivers of change in LTs, and competency changes for WLP practitioners. Consistent with the purpose of this study, the purpose of this literature review is to explore established knowledge, identify gaps in knowledge about LT, and connect this study with previously published work. Therefore, Chapter 2 includes the following sections: (a) historical perspectives, (b) philosophical changes, (c) past studies sponsored by ASTD, (c) advantages and limitations of competency models, (d) key trends driving competency changes, (e) comparison of old and new competencies, (f) a review of the ASTD competency models, (g) changing roles of WLP practitioners, (f) the reshaping of terminology, and (g) predictions.

Historical Perspectives

Defining the Terms Role and Role Transitions

The term role comes from the theater and refers to a part played by an actor (Thomas & Biddle, 1966). In the 1920s and 1930s, the term began appearing in social science literature to the point at which Biddle (1979) suggested that “role theory is a vehicle, or perhaps the major or only vehicle, presently available for integrating the three
core social sciences of anthropology, sociology, and psychology into a single discipline whose concern is the study of human behavior” (p. 11). Ashforth (2012) subsequently identified two basic sociological perspectives on roles, the structural functionalist and the symbolic interactionist. Structuralists define roles “as sets of behavioral expectations associated with given positions in the social structure” (Ebaugh, 1988, p. 18) and view roles as functional for the social structures in which they are embedded (e.g., Merton, 1957, Parsons, 1951). Symbolic interactionists look carefully at peculiar and distinctive interactions as they take place between human beings (Blumer, 1969, pp. 78-79).

Ashforth (2012) defined a role as a position in a social structure (p. 4). He further defined position to mean a more or less institutionalized, or commonly expected and understood, designation in a given social structure, such as an accountant in a work organization (p. 4). He defined role identity as the collective goals, values, beliefs, norms, interaction styles, and time horizons that are typically associated with a role (p. 6). He argued that role identity provides a definition of self-in-role, or a persona that one may enact. Lastly, he suggested that a role’s boundaries facilitate the articulation of a role identity by circumscribing the domain of the role—by demarcating the activities that belong to the role and those activities that belong to other roles.

Louis (1980) identified a role transition as that which occurs when an individual either switches from one role to another (interrole transition) or changes his or her orientation toward a role already held (intrarole transition).
Transitioning Roles and New Competencies

Continual advancements in LTs have had a tremendous impact on education, training, and development. These technological innovations and advancements have transformed the role of the student into that of a self-directed and independent learner. Along with stimulating these changes for learners, technology advancements have changed the role of trainers (Wegner, Holloway, & Garton, 1999). Trainers’ worlds are vastly different today than they were in the past because of the creation of the Internet, the development of multifaceted communication tools that allow geographically dispersed individuals to collaborate in real time, the influx of technology-savvy generations in the workplace, and the high demands for just-in-time training. These developments have changed the role of trainers and introduced a new set of required knowledge, skills, and attitudes for trainers.

Philosophical Changes

It is clear that as the popularity of LTs increases, the roles of trainers and other WLPs must also change to fit more contemporary instructional approaches. To understand the effect of LTs on the trainers’ role, it is first necessary to understand how traditional philosophies of training have changed to better fit these contemporary approaches. In this section, four philosophical changes that have influenced traditional perceptions of training are discussed. It is important to note that although these paradigms are discussed independently, all are intertwined with and influence each other.
Pedagogical Versus Andragogical

The most fundamental change in the field of WLP has been the shift from a pedagogical approach to an andragogical approach (Gibbons & Wentworth, 2001). According to the pedagogical approach, learners have dependent personalities that cause them to rely heavily on an instructor’s knowledge. In such an environment, knowledge is disseminated in a one-sided method from the teacher to the student. Learners are expected to accept the information as it is disseminated and be able to repeat it for the teacher as it was presented. This perspective considers learning to be subject-centered and views a learner’s past experience as a foundation to be developed rather than a useful resource.

In contrast, andragogy is based on self-directed learning theory and is seen as the art of science of facilitating learning for adults (Gibbons & Wentworth, 2001). According to this perspective, learning is task- or problem-centered and is based on need rather than age level or prescribed curricula (Gibbons & Wentworth, 2001, p. 2). This approach is based on an experiential model that is “learner-center rather than instructor-centered, dialogue-based rather than lecture based” (p. 2). The andragogical perspective views the learner’s past experience as a rich resource from which all participants involved can learn.

Objectivism Versus Constructivism

Objectivism and constructivism are two major instructional frameworks that have emerged and currently influence design and delivery initiatives. Objectivism is an
instructional framework influenced by the pedagogical perspective and focuses on the creation of performance objectives and programmed instruction following a series of stages that are intended to guide the instruction and evaluation of participants (Gold, 2001). Objectivism emphasizes the transfer of knowledge from trainer to learner, thereby promoting passive learning.

In contrast to objectivism, constructivism focuses on learners, with the primary goal of helping them construct meaning from experience (Merriam & Caffarella, 1999) in an information-rich and socially meaningful learning environment (Gold, 2001). Constructivism is influenced by the andragogical approach, holding that people “assimilate new knowledge by producing cognitive structures that are similar to the experiences they are engaged in” (Gold, 2001, p. 37). Participants use these new knowledge structures within their collections of experiences as they interact in various environments.

**Fixed Versus Flexible**

Over the past two decades, a third philosophical change in education and training has occurred in the introduction and continued development of various technological advances. This shift is from fixed knowledge in a certain time and place to knowledge that is accessible anytime, in any place, and at any pace (Yeung, 2001). Gold (2001) stated that this flexible shift in providing knowledge that is accessible anytime and in any place “creates the potential for a change in the way learning is transacted from those who
provide information (i.e., teachers or facilitators) to those who receive it (i.e., students)” (p. 35).

**Teacher Versus Coach**

A final significant philosophical change that has occurred during the past decade is the shift from the trainer serving as an information provider to more of a coach. As a coach, the trainer orchestrates the learning process. This change has been influenced by both the constructivist and andragogical philosophies and requires leaders to act as facilitators, guiding learners through the creation of authentic tasks and helping them to integrate their understanding of multiple perspectives through reflection (Gold, 2001). Under this philosophy, the responsibility for learning is transferred from facilitator to learner. The facilitator uses experiential learning models.

**Previous Studies Sponsored by ASTD**

Before beginning the follow-up study, it was vital to review past competency studies in WLP. Studies from ATD in particular helped elucidate the development of fundamental competencies and changes in LT from 1998–2015. This review of competency models and studies is centered on those research studies completed by ATD since it is the leading association of WLP professionals. The review follows a descending chronology from the most recent publication in 2015 to the first American Society of Training and Development (now known as Association for Talent Development)
competency study’s publication in 1998. Reviews and analyses of nine foundational competency studies conducted during this period are presented in the following section.

Each review and analysis is divided into three subsections: the study’s title, a description of the study, and the study’s key findings. An additional subsection on the studies’ advantages and limitations follows the table display.

Table 2-1

<table>
<thead>
<tr>
<th>Study</th>
<th>Description</th>
<th>Key Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATD Research: Building a Talent Development Structure without Borders (2015)</td>
<td>The 2015 study summarizes in whitepaper format the evolution of talent development. The focus is on how to develop the individuals who are most important to the strategic success of the organization.</td>
<td>The study identifies 15 primary functions and 24 secondary functions for the creation of the ATD talent development framework. These functions are fluid and can change from secondary to primary depending on an organization’s unique needs.</td>
</tr>
<tr>
<td>ATD Research: Learners of the Future (2015a)</td>
<td>The 2015 study completed by ATD and the Institute for Corporate Productivity (i4cp) explores the future of talent development and how workers’ training needs will change by 2020.</td>
<td>The study identifies seven key findings, including: (1) learning functions are not making the kind of progress future learners’ needs will demand; (2) nearly two-thirds of organizations could fail future learners; (3) blends of live and electronic learning will characterize delivery mechanisms in 2020; (4) organizations should provide more internships and partner with colleges and universities to help new hires to bring necessary skills to the workplace; (5) as technologies enable</td>
</tr>
<tr>
<td>Study</td>
<td>Description</td>
<td>Key Findings</td>
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<tr>
<td><strong>ASTD Competency Study: The Training and Development Profession Redefined (2013)</strong></td>
<td>The 2013 ASTD study follows the same research-based professional competencies path set by the 2004 ASTD study. The difference is that the 2013 study identifies key trends and drivers that it anticipates will have the greatest effect on current and future practices.</td>
<td>employees to better direct their own future learning, learning and development functions stand to make positive impacts on both business and learning performance; (6) to support social learning made possible by social media, learning and development functions need to involve end users in designing engaging learning opportunities; and (7) predictions that learning management systems will soon be obsolete are premature.</td>
</tr>
<tr>
<td><strong>ASTD Competency Study: Mapping the Future (2004)</strong></td>
<td>The principle objectives of the 2004 study are: (1)</td>
<td>This study identifies eight key trends for which training</td>
</tr>
<tr>
<td>Study</td>
<td>Description</td>
<td>Key Findings</td>
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<tr>
<td><strong>ASTD Models for Workplace Learning and Performance (1999)</strong></td>
<td>The purpose of the 1999 report is to determine the current and future competencies (five years beyond 1999) that will be required to succeed in the WLP field.</td>
<td>This report defines roles (not job titles) for WLP professionals. Seven WLP roles are identified including manager, analyst, intervention selector, intervention designer, intervention implementer, change leader, and evaluator. A set of 52 specific competencies are identified and classified into 6 groups: (1) analytical competencies; (2) technical competencies, (3) leadership competencies, (4) business competencies, (5) interpersonal competencies, and (6) technological competencies.</td>
</tr>
<tr>
<td><strong>ASTD Models for Learning Technologies (1998)</strong></td>
<td>This study examines the roles, competencies, and work outputs that human resource development (HRD) professionals need to implement learning.</td>
<td>The study provides a classification system that relates instructional methods to presentation methods and distribution formats. This study introduces new...</td>
</tr>
</tbody>
</table>
Study Description Key Findings

Dede & United States. Congress, Office of Technology Assessment (1989). Study described how present delivery of instruction over distance could become an even more powerful and useful educational medium by incorporating ideas from cooperative learning and computer-supported cooperative work. Discussed how distance learning is evolving to technology-mediated interactive learning and how it will become the preferred delivery system.

Advantages and Limitations of Competency Studies

Organizations can take advantage of the information and findings identified in these competency models and studies. Competency models constructed in these studies include both strategic and practical benefits to the organizations that use them. As with all studies, there are advantages and limitations. In reviewing the most recent six ATD competency studies, the following advantages and limitations were identified.

Table 2-2
Advantages and Limitations of Past Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Advantages</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATD Research: Building a Talent Development Structure without Borders (2015b)</td>
<td>The format highlights the evolution of talent development. The focus is on developing the individuals who are most important to the strategic success of the organization.</td>
<td>The study makes the assumption that WLP professionals will know how to identify functions as primary or secondary.</td>
</tr>
<tr>
<td>Study</td>
<td>Advantages</td>
<td>Limitations</td>
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<tr>
<td><em>ATD Research: Learners of the Future (2015a)</em></td>
<td>The study identifies 15 primary functions and 24 secondary functions used to build the ATD talent development framework.</td>
<td>The study does not look in-depth at what the needs of trainers will be.</td>
</tr>
<tr>
<td><em>ASTD Competency Study: The Training and Development Profession Redefined (2013)</em></td>
<td>The study explores the future of talent development and how workers’ training needs will change by the year 2020.</td>
<td>The competency model is not a one-size-fits-all model and requires organizations to customize the model to meet their own needs. Customization may require organizations to work with experts who are familiar with how to customize competency models.</td>
</tr>
<tr>
<td><em>ASTD Competency Study: Mapping the Future (2004)</em></td>
<td>The study identifies key trends and drivers that it anticipates will have the greatest effect on current and future practices.</td>
<td>This study does not consider the distinct areas of expertise training and development practitioners must have in order to be successful. These areas include performance improvement, the evaluation of learning impact, and integrated talent management.</td>
</tr>
<tr>
<td>Source</td>
<td>Description</td>
<td>Limitations</td>
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</tr>
<tr>
<td><em>ASTD Models for Workplace Learning and Performance</em> (1999)</td>
<td>The purpose of the 1999 report was to determine the current and future competencies (five years beyond 1999) that would be required to succeed in the WLP field.</td>
<td>This study looks at a time frame of five years post-1999 and does not take into consideration the pace of LTs’ growth.</td>
</tr>
<tr>
<td><em>ASTD Models for Learning Technologies</em> (1998)</td>
<td><em>ASTD Models for Learning Technologies</em> examines the roles, competencies, and work outputs that HRD professionals need to implement LTs in their organizations.</td>
<td>This study does not take a holistic approach to training and development that includes foundational competencies and skill sets such as a global mindset, industry knowledge, and interpersonal skills.</td>
</tr>
<tr>
<td>Dede, C., &amp; United States. Congress. Office of Technology Assessment. (1989)</td>
<td>This study examines how distance learning is evolving to technology-mediated interactive learning.</td>
<td>This study does not give consideration to how the teachers’ role will change as technology-mediated interactive learning increases.</td>
</tr>
</tbody>
</table>

ASTD studies have covered several topics over the years. Key trends propelling ASTD research include globalization, multi-generational workplaces, technology, and economic factors. These studies have revealed many changes in terms, roles, and the competencies needed by WLP professionals. WLP professionals must understand these changes in order to be successful in their careers. WLP professionals must also adjust to the new competencies associated with various LTs. Like so many other aspects of training and development, these competencies are ever-changing. Competencies can be defined as clusters of skills, knowledge, abilities, and behaviors required for success in WLP jobs (ASTD, 2004, p. xix). Training and development practitioners working in the WLP field need to understand which critical competencies to master in order to be
successful in their areas of expertise (AOEs). The ATD (2004) defines an AOE as “specific technical and professional skills and knowledge required for success in WLP specialty areas” (p. 23).

For more than 30 years, ATD has researched and created competency models that help to define standards of excellence and professionalism in the training and development field. Since its first study in 1978 to its most recent study in 2013, the ATD has helped to clarify the knowledge, skills, abilities and behaviors that are required for WLP professionals to be successful. Several of these studies are highlighted in this review.

The 2013 ASTD Competency Study: The Training and Development Profession Redefined lists technology literacy as one of its six foundational competencies.

Foundational competencies are the characteristics and proficiencies that training and development professionals must demonstrate to be successful. The six foundational competencies are “business skills, interpersonal skills, a global mindset, personal skills, industry knowledge, and technology literacy” (ASTD, 2013, p. xvii). This same competency model lists 10 AOE, including “performance improvement, instructional design, training delivery, learning technologies, evaluating learning impact, managing learning programs, integrated talent management, coaching knowledge management, and change management.” As defined in the 2013 ASTD study, an individual with particular AOE identifies, selects, and applies a variety of LTs; adapts LTs; and matches the appropriate LT to the specific learning opportunity or challenge at hand (p. xx).

ASTD Models for Workplace Learning and Performance: Roles, Competencies, and Outputs study highlights technology competencies (Rothwell, Sanders & Soper,
These technology competencies include computer-mediated communication, distance education, electronic performance support systems, and technological literacy. These competencies are explained in more detail in the *ASTD Reference Guide to Workplace Learning and Performance: Present and Future Roles and Competencies* (Rothwell & Sredl, 2000). Trainers and development practitioners working as WLP professionals must recognize these technological competencies, understand how these competencies are linked to LTs, and determine how changes in these competencies affect their day-to-day roles.

In order to understand specific technology competencies, one must first understand the definitions used in field of technology. *Computer-mediated communication* refers to an understanding of the implications of current and evolving computer-based electronic communication. *Distance education* involves an understanding of the evolving trends in technology-supported delivery methods and the implications of separating instructors and learners in time and location. WLP professionals, especially those working in training and development, must have an understanding of current and evolving electronic performance support systems and their appropriate applications. Lastly, these WLP professionals must have a concrete understanding of how to apply existing, new, and emerging forms of technology.

**Key Trends Driving Competency Changes**

The 2013 *ASTD Competency Study: The Training and Development Profession Redefined* identifies eight key trends driving competency changes for training and
development professionals (p. xii). Five of the eight key trends involve technology. These trends include: (a) advances in technology and Internet capability, (b) advances in software, (c) the growing adoption of mobile devices for learning, (d) a culture of connectivity and information-sharing, and (e) the increased ability to use and collect “big data.”

The trend toward advances in technology and Internet capability refers to changes in the speed, storage capacity, functionality, and user interfaces of popular electronic devices such as smartphones, tablets, and other mobile devices (ASTD, 2013, p. xii). This is particularly important since such devices are expected to be used as training delivery platforms moving forward.

Advances in software applications also play a critical role in shaping the roles of training and development professionals (ASTD, 2013, p. xii). Advances in software applications require training and development professionals to identify, select, and apply the appropriate software applications for specific learning opportunities. This area includes social software applications designed for sharing knowledge and information.

The growing adoption of mobile devices for learning is having a profound effect on the WLP field. This is because training and development professionals are refining the design and delivery of training to suit an ever-expanding list of mobile devices, including smartphones, tablets, and e-readers. The ASTD’s 2012: State of the Industry Report (SOIR) indicates that 28% of the respondents worked for organizations that made internal learning content available via mobile devices (p. 48). The SOIR further identifies the “ubiquity of mobile devices” and their increasing appropriateness for delivering learning solutions as a key factor in “changing the world and our experience of it” (p. 48).
A culture of connectivity and information-sharing refers to the ability to have constant communication. This allows employees to communicate and interact with colleagues around the world. This is a reality that WLP professionals cannot ignore. Professionals in charge of training new generations of employees need to stay up-to-date with the knowledge, skills, abilities, and behaviors of this increasingly connected workforce (ASTD, 2013, p. xiii).

An increased ability to use and collect “big data” is also listed among the growing trends in the ASTD 2013 study. “Big data” refers to a company’s use of business intelligence and data analytics to make decisions. Training and development professionals need to understand the factors that are behind these business metrics and the ways in which organizational leaders use them to allocate resources. These professionals must be able to select the metrics that have meaning for and add value to their organizations and their leaders (p. xiii).

**Comparison of Old and New Competencies**

Given these emerging technologies, researchers and practitioners have recognized the importance of identifying and developing certain competencies, skills, and knowledge. For example, the *ASTD Models for Learning Technologies* (1998) lists 31 different competencies within its learning technologies section (Piskurick & Sanders, pp. 20-25). For the purposes of this study, several of these competencies are described here. The first competency, *awareness of learning technology industry*, refers to a general
understanding of trends within the LT industry, as well as knowledge of existing and emerging technologies.

The second competency, management of learning technology selection, entails supervising the selection of LTs and ensuring that this selection meets organizational needs. This competency also involves determining when, how, and where LTs should be used and monitoring the progress of all the other aspects of the delivery process (p. 23).

The third competency is management of learning technology implementation, support, and evaluation. This particular competency speaks to WLP practitioners’ ability to supervise the implementation and maintenance of LTs and to ensure that all systems continuously meet company specifications (p. 23).

Lastly, the key competency of cost analysis/ROI of the presentation method entails the ability of WLPs to understand the relative costs of each presentation method or combination of methods and to ensure that the organization is receiving a good value for the dollar spent on these technologies (p. 25).

The 2013 ASTD Competency Study: The Training and Development Profession Redefined clarifies important changes to these foundational competencies. The foundational competencies reflect newfound emphases on technology literacy, a global mindset, emotional intelligence, dual-industry knowledge, and innovation (p. 18). These are the competencies that WLP professionals must demonstrate in the current business environment.
A Review of the ASTD Competency Models

In order to begin to investigate the changes in WLP practitioners’ roles, it is necessary to have a high-level graphic depiction of the knowledge, skills, abilities, and behaviors, otherwise known as competencies, required for success in various training and development professions. High-level graphic depictions are provided in Figures 2-1 and 2-2 below. The 2004 and 2013 ASTD competency models share similarities and differences. For example, both models list foundational competencies. The first graphic draws on the findings of the 2004 ASTD Competency Study: Mapping the Future (ASTD, 2004).

In 2004, the ASTD gathered information from more than 2,000 ASTD members and other practitioners. These individuals helped to define the current and future states of training and development professionals, including WLP practitioners. One outcome of this study was the discovery of new information about the eight trends driving changes in the workplace that were expected to have significant implications for WLP professionals. A limitation of this study is its lack of a stronger focus on LTs. The seventh trend identified in this study, life and work in the E-Lane, focuses on how technology (especially the Internet) is anticipated to transform the way people work and live. The true limitation of this trend is that it does not place a significant emphasis on how technology is expected to affect the overall roles of WLP professionals.

Reviewing the 2004 pyramid model below, one notices three specific categories of foundational competencies: interpersonal, business/management, and personal. The model also specifies AOEIs. The AOEIs are positioned above the competencies in the
model because they direct and supplement the competencies by providing specialized skills and knowledge.

The roles listed at the top of the model are broad areas of responsibility within the WLP profession. These roles require individuals to have both special competencies and AOEs to perform effectively. The 2004 ASTD study lists four primary roles, including learning strategist, business partner, project manager, and professional specialist.

*Figure 2-1. ATD Competency Model™ (ASTD, 2013, p. xvi). Original material published by the American Society for Training and Development (ASTD).*
In 2013, the ASTD surveyed and interviewed approximately 188 professionals. The organization also used literature reviews to gain input from these professionals. The 2013 ASTD Competency Model: Training and Development Redefined model shown below reflects additional emphases on developing technology literacy, adopting a global mindset, demonstrating emotional intelligence, developing dual-industry knowledge, and being innovative (ASTD, 2013, p. xvii). These changes are reflected in the redesign of the model into the shape of an octagon, with the base of the octagon listing foundational competencies. These foundational competencies include business skills, a global mindset, industry knowledge, interpersonal skills, personal skills, and technical literacy.

The octagon also houses the AOEs. The AOEs include several new areas: performance improvement, instruction design, training delivery, learning technologies, evaluating learning impact, managing learning programs, integrated talent, and change management.

Like the 2004 ASTD study, the 2013 study identifies eight key trends currently driving change for WLP and training and development professionals. These key trends differ from the key trends identified in 2004, with the new trends paying additional attention to technology and learning. Aspects of the new trends include advances in technology and Internet capability, advances in software applications, the growing adoption of mobile devices for learning, and a culture of social connectivity including information-sharing. Additional research on how these aspects are changing the roles of WLP and training and development practitioners is thus needed.

The 2013 ASTD study provides a cursory review of some of the additional roles that have emerged due to rapidly developing technologies. New roles listed in the 2013
ASTD study include facilitator of learning, content curator, information manager, and builder of learning communities (p. 10). Additional research needs to be completed in order to uncover other roles stemming from the increase in LTs.

This study focuses on the newly incorporated foundational competency of technology literacy.

Figure 2-2. ATD Competency Model™ (ASTD, 2013, xvii). Original material published by the American Society for Training and Development (ASTD).
New Learning Strategies Due to Changes in Learning Technologies

How do technology changes enable new learning movements, and why is this important for WLP professionals and practitioners involved with training and development strategies? How individuals learn has intrigued psychologists and educators for decades, resulting in the creation of learning theories such as pedagogy, behaviorism, constructivism, developmentalism, and cognitivism, among others. Technology has enabled the development of new learning movements that training and development professionals responsible for implementing WLP initiatives and strategies need to understand. These movements include mastery learning, crowd-sourced learning, micro-learning, and machine learning (Galagan, 2015, p. 31).

Mastery learning refers to an instructional strategy pioneered by Benjamin Bloom in 1968. While at that time this strategy was not scalable, today Southern New Hampshire University has given new life to mastery learning through a self-paced online program called College for America. According to Galagan (2015), this online program uses a set of 120 competencies and connects students with mentors in the workplace and community (p. 32). Crowd-sourced learning is the process of obtaining ideas or content via collaboration within a large group of people. These efforts are primarily completed using online resources (p. 32). Micro-learning is a movement that advocates for small bursts of relevant learning instead of long, linear paths to understanding (p. 32). Galagan reflected on a statement made by Jeff Fernandez, writing in Learning Solutions magazine that:

Micro-learning is next-gen training for a workforce ready to consume it the way it does everything else: fast, small, and “our way.” Easily accessible via devices
such as mobile phones, tablets, and laptop computers in formats as varied as videos, blogs, games, quizzes, simulations, podcasts, or slideshows, micro-learning is a solution for dwindling attention spans, just at the time when technology is changing so rapidly that traditional L&D training methods can’t keep up. (p. 32)

Role and Learning Environment Changes Stemming from Learning Technology

LTs have allowed learning to become a more dynamic process. More specifically, because of technology changes, the learning environment has expanded to include greater interaction between learners and the training content, as well as between learners and the instructor. Figure 2-3 below illustrates how the learning environment has expanded from the traditional classroom setting to a blended learning environment (Noe, 2016, p. 322). As illustrated in Figure 2-3 changes in LTs have shifted the ways in which WLP practitioners present information to learners as well as the structure of the overall learning environment. The classroom learning environment typically puts the trainer/instructor face-to-face with learners without requiring the use of LTs. In the classroom environment, trainers play a more passive role in learning, and communication about course content is usually one-way, from the instructor to the learner (Noe, 2016, p. 322). The technological learning environment, on the other hand, introduces technology that allows for instructors to reach out to learners in remote or different geographical locations. In this way, LTs allow learning to become a more dynamic process. Figure 2-3 shows the technological learning environment and its greater interaction between learners and training content, as well as between learners and the instructor (Noe, 2016, pp. 322-323). In the technological learning environment, the trainer may still help design the instruction, but the content is delivered to the learners primarily through technology such
as online learning, simulations, iPods, or iPads (p. 323). The instructor accordingly becomes more of a coach and a resource who answers learners’ questions. Lastly, the blended learning environment uses some LTs while still allowing the trainer/instructor to have some face-to-face interaction with the learners.

![Diagram of Learning Environments]

*Figure 2-3. Types of Learning Environments. Adapted from Noe (2016, p. 322).*

**The Reshaping of Terminology**

LTs have helped to shape terms used in the training, human resource development (HRD), and WLP fields. When one compares these terms, “training,” “HRD,” and “WLP,” one can see how technology has helped to transform the terms’ definitions.
Rothwell, Sanders, and Soper compared these three terms in the *ASTD Models for Workplace Learning and Performance Study* (1999). In this publication, the definition given for training and development is that which occurs through planned learning interventions; in particular, training focuses on identifying and developing key competencies that enable employees to perform their current jobs. The definition given for HRD is the integrated use of training and development, organization development, and career development in order to improve individual, group, and organizational effectiveness (McLagan & Suhadolnik 1989). Finally, WLP is defined as the integrated use of learning and other interventions for the purpose of improving individual and organizational performances. The WLP definition also includes wording to clarify that WLP relies upon a systematic process of analyzing and responding to individual, group, and organizational needs. WLP is identified as creating positive changes within organizations by balancing human, ethical, technological, and operational considerations (McLagan & Suhadolnik, 1989).

Once technology was made a part of the definition of WLP, practitioners began to describe the types of technologies that were expected to impact the future roles of WLP practitioners. For example, the *ASTD Models for Workplace Learning and Performance Study* (Piskurick & Sanders, 1999) lists various emerging technologies. These technologies include Web-based training, desktop training, interactive distance learning, high-definition television, portable computers, voice recognition, personal communications devices, and virtual reality.
Examples of Virtual Learning and Technologies

Yoon and Lim (2010) described promising aspects and practices of virtual learning and technologies, while exploring how concepts and ideas from organizational competency, talents, and technology adoption can be used to prioritize and systematize virtual human resource development (VHRD). In particular, the researchers argued that technologies should be incorporated within an organization in order to improve the effectiveness of employees’ learning, performance, and development (p. 715). Yoon and Lim also argued that virtual learning and technologies are shifting the roles of HRD practitioners from those of experts in learning and development to those of work-solution partners, leading the creation of “smart” organizations. Rosenberg (2006) defined a smart organization as “a high-performing organization that allows knowledge and capabilities, enabled by technology, to grow and flow freely across departmental, geographical, or hierarchical boundaries” (p. 39).

Bennett (2009) proposed defining VHRD as “a media rich and culturally relevant web environment that strategically improves expertise, performance, innovation, and community-building through formal and informal learning” (Yoon and Lim, 2010, p. 39). Yoon and Lim (2010) suggested adding to this definition the following stipulations: “(a) VHRD should not be the sole responsibility of the HRD profession, whether it is called HRD, WLP, training development, workforce development, or performance technology; (b) informal learning consists of multiple forms; (c) informal learning needs to be part of integrative learning and performance solutions that include formal learning; and (d) Web
technologies can be purposefully used for multiple formal or informal learning methods” (Yoon & Lim, 2010, p. 39).

An important aspect of Bennett’s article is its suggestion that the goals of introducing competency in the workplace are to standardize the knowledge and skills of employees for developmental purposes; to align HR planning and development activities with a given organization’s strategic direction through effective recruiting, training, coaching, and rewarding; and to provide more direct information related to business goals and strategies (Yoon & Lim, 2010, p. 39).

**Prediction**

Over the years, various predictions have been made about how LTs will impact the roles of WLP professionals. Several of the earliest predictions spawned from the findings of ASTD Models for HRD Practice (1989). This study found that two of the top ten future influences on HRD were likely to be an increased reliance on sophisticated technology and the increased use of various approaches that integrate HRD systems and technology in the workplace. Certainly, these predictions have come to pass. WLP practitioners continue to investigate new LTs as the LTs are introduced into the field.

Samaka and Ally (2015) argued that because of the information explosion, continual changes in technologies, and globalization, organizations must continually train their employees (p. 122). Samaka and Ally further argued that to reach its organizational goals, an organization must make certain it has adequately trained its employees on current training methods. This training must be flexible given the varied schedules and
locations of employees. This flexibility can be realized using technology-enhanced learning in which the training is delivered using information and communication technology (p. 122).

As mobile devices become smarter, they can be used to provide flexible training to employees in the workplace (Samaka & Ally, 2015, pp. 122-123). Organizations must take advantage of existing research on the use of mobile technologies by employees to provide training delivered via mobile technologies.

Summary

This chapter provided a review of the related literature, focusing on changing competencies, key drivers of change, and these changes’ impacts on areas such as learning theories, learning environments, WLP practitioners’ roles, the reshaping of terminology, and future predictions regarding LT. Although the existing literature describes some of the types of LTs, some changes in competencies, and changes in WLP roles, it does not explore how organizations are managing the financial costs of LTs and supporting WLP practitioners in their new roles. This chapter focused on types of LTs and changes in the area of competencies and WLP roles. The next chapter discusses the methodology used in this study.
Chapter 3

METHOD

Purpose of the Study

According to Redmann, Lambrecht, and Stitt-Gohdes (2000), “Qualitative research seeks to be detailed, rich and vivid in understanding and looks to include the social/environmental context and individual’s perspective in the inquiry” (p. 132). The systematic and structured processes used in this study include open coding, the establishment of initial categories of information, axial coding (to explore casual conditions), and the specification of relationships among categories (Creswell, 1998).

The purpose of this study is to explore and identify specific changes in LTs, describe how these LT changes affect the day-to-day roles/positions of WLP practitioners or consultants, and uncover how organizations are responding to these changing roles. This chapter includes the following sections documenting the research methodology of the study: (a) restatement of research questions; (b) design of study; (c) population and sampling; (d) instrumentation; (e) data collection; (f) data analysis; and (g) work breakdown structure.
Restatement of Research Questions

In an effort to investigate the relationships between the study’s independent and dependent variables, this study asked the following research questions:

Research Question (RQ1): How do WLP practitioners define learning technology?

Research Question (RQ2): What LT changes have occurred over the past five years?

Research Question (RQ3): How do these LT changes affect the competencies needed by WLP practitioners?

Research Question (RQ4): How do these LT and competency changes affect the day-to-day roles of WLP practitioners?

Research Question (RQ5): How are organizations responding to and supporting the LT and competency changes?

Design of Study

The research method used in this study was the general inductive analytical approach. The general inductive analytical approach is a systematic procedure for analyzing qualitative data in which the analysis is likely to be guided by specific evaluation objectives. A general inductive analysis primarily uses detailed readings of raw data to derive concepts and themes through interpretations made from the raw data. The primary purpose in selecting a general inductive analytical approach was to be able to thoroughly review the raw data without the constraints imposed by structured methodologies.
As the researcher of this study and a tenured practitioner in the field of WLP, I needed to take steps to avoid any biases coming through in this research study. These steps included:

1. I acknowledged the limitations before the research began.
2. Thought about each limitation in detail.
3. Thought about how each limitation would be dealt with in the research study.

Because I was a researcher and practitioner for 25 years in the WLP field, I realized it would be extremely important to pay attention to how my biases may hinder my research findings. Several of the biases I focused on were confirmation bias, leading questions and wording bias, and question-order bias.

Confirmation bias occurs when researchers interpret evidence or data in such a way that it supports their expectations or what they hope the findings of the research will show. To avoid this bias, each interview was recorded. Recordings were then transcribed by a professional transcriptionist. Transcriptions were then sent to the participants to review and make any corrections they felt were necessary.

Leading questions and wording bias occurs when the researcher elaborates on a respondent’s answer. To minimize this bias, if I needed additional clarification, I asked questions in the respondent’s language.

Question-order bias refers to a bias than can occur due to how the researcher sequences the questions and uses words and ideas presented in the questions to impact their thoughts, feelings and attitudes on subsequent questions. While it is sometimes difficult to avoid question-order bias, I asked general questions as much as possible
before asking more specific questions. I also asked more positive questions before negative questions in some situations.

To address these biases, I also asked two fellow researchers to review my work at various stages of the study. These individuals were not familiar with my study before reviewing my work.

Through detailed readings, reviews, and an analysis of the raw data such as transcripts, I was able to identify dominant or significant themes. I was also able to condense extensive and varied raw text data into a brief summary format and establish clear links between data points that were transparent and defensible. Transparency means that links are able to be shown to others, and defensible means the links are justifiable given the objectives of the research. Lastly, by using a general inductive analytical approach, I was able to construct a theory about the underlying structure of the participants’ experiences.

The systematic and structured processes used in this study include open coding, the establishment of initial categories of information, axial coding (to explore casual conditions), and the specification of relationships among categories (Creswell, 1998). Coding is the pivotal link between collecting data and developing an emergent theory to explain these data. Through coding, a researcher defines what is happening in the data and begins to grapple with what the data mean (Charmaz, 2014, p. 113). Open coding is the first level of coding. At this point, the researcher is looking for distinct concepts and categories in the data that will form the basic units of his or her analysis. In other words, the researcher is breaking down the data into first-level concepts, or master headings, and second-level categories, or subheadings. In axial coding, the researcher uses the concepts
and categories identified during open coding while re-reading the text. Re-reading the

text helps in two ways. First, re-reading helps to confirm that the concepts and categories
accurately represent interview responses, and second, it helps show how the concepts and
categories are related. In examining the axial coding, the researcher might ask questions
such as, “What conditions have caused or influenced concepts and categories?” “What
is/was the social/political context?” or “What are the associated effects or
consequences?”

In this study, I solicited study participants to provide a definition of the term
learning technology, as well as to discuss how LTs have changed in their organizations,
how these changes in LTs have changed the competencies needed by WLP professionals,
and how changes in LTs have changed the overall roles of WLP practitioners. Pertinent
information gathered through a review of the extant literature was used to determine the
study’s interview protocol.

Population and Sampling

Population

In qualitative research, sample selection has a profound effect on the quality of
the research. Researchers have been criticized for failing to describe sampling strategies
in sufficient detail, which makes the interpretation of the findings more difficult and
affects the possible replication of the study (Kitson et al., 1982). Purposeful criterion-
based sampling was used in the selection of participants for this study. Merriam (1988)
asserted that purposeful sampling is logical when the researchers plan to use data “not to answer questions like ‘how much’ and ‘how often’” but to “solve qualitative problems, such as discovering what occurs, their implications of what occurs, and the relationships linking to the occurrence” (Merriam 1988, p. 48).

As in the pilot study, participants were selected from the membership roster of the central Pennsylvania chapter of ATD. Members of this chapter hold various WLP roles, including those of trainer, instructional developer, designer, HRD manager, consultant, and talent developer. The members come from many different industries and fields, but the ones who participated in the study were all familiar with the research topic.

**Sampling**

Sampling is designed to enable a researcher to select a small subset of the target population that represents the whole population. Once approval of this research proposal was granted by my dissertation committee, communication regarding the study was sent to the members of the central PA chapter of ATD using email addresses from the chapter mailing list given to me by the board of directors.

Criteria for selection consisted of years of service in a WLP position, currently using multiple types of learning technologies, ability to discuss and define different types of learning technology solutions, interest in research topic, and willingness to dedicate at least 2-3 hours of their time with researcher for interview and reviewing transcript.

To fulfill the criteria of years of service, the WLP practitioner needed to have at least 2 years of service utilizing multiple learning technology sources. Research
participants were asked to clarify years of service before they participated in the research study.

Potential research participants were asked to share what types of learning technologies they were currently using. This helped researcher to get a mix of all types of learning technologies currently being used and why the organizations were using them.

Research participants were asked to describe the different learning technologies they were currently using. This assisted the researcher in getting a mixture of all types of learning technologies. It also helped the researcher to assure that participant was technology savvy.

Lastly, research participants were asked if they could commit at least 2-3 hours of their time so that they could be interviewed and thoroughly review the completed transcript of the interview.

In order to solicit research participants, the researcher used several different means to communicate with the members of the PA chapter of ATD. The chapter has a newsletter and Web site, and it holds quarterly meetings. An initial discussion to gauge interest in and gain approval for the study from the chapter leadership was held in February 2016. The chapter’s board of directors agreed to allow me to communicate with the chapter members to determine interest. I set the maximum number of participants at 25. Ultimately there were 12 individuals selected from the central PA chapter of ATD’s membership directory.
Instrumentation, Data Collection, and Data Analysis

Instrumentation

I purposefully followed the same protocol as that used in the pilot study. Interviews were structured using a set of approximately 25 questions. The questions pertained to each participant’s current role, education, use of LTs, current needed competencies, changes in competencies, and support received from the executive management of his or her organization. I allowed myself to ask additional questions about interesting comments that participants made, and each interviewee was given the opportunity to ask questions of me as well. A tape recording of each interview was made and transcribed verbatim.

Data Collection

I followed the standard data-collection procedure, which involves obtaining approval for the protection of human research participants from the relevant Institutional Review Board (IRB). IRB approval to conduct this study was given. This means that the protection of the participants was ensured prior to the administration of the interviews.

The interview procedure used was based on the intensive interviewing technique described by Charmaz (2014, p. 56). Intensive interviewing is used to shape a one-sided conversation that explores a person’s substantial experience with the research topic (p. 56). Key characteristics of the intensive interviewing process include: (a) selection of research participants who have firsthand experience that fits the research topic; (b) in-
depth exploration of participants’ experiences and situations; (c) reliance on open-ended questions; (d) objective of obtaining detailed responses; (e) emphasis on understanding the research participants’ perspectives, meanings, and experiences; and (f) follow-up regarding unanticipated areas of inquiry, hints, and implicit views and accounts of actions (p. 56).

**Data Analysis**

To analyze the interviews, a coding system was used. The codes were derived inductively from the interviews. During coding, each word and sentence was considered as a text. These codes were short terms such as “learning technology,” “training,” “competencies,” “roles,” “role transition,” and “technology.” After each new code was created, I entered the new code into an emerging dictionary that was built to aid in the structuring of themes throughout the coding process. The NVIVO (2018) software program was used to enter all codes, facilitate coding links, perform text searches, and find codes with intersections.

The researcher demonstrated quality of constructs used in the study. “Quality constructs of establishing trustworthiness, credibility, transferability, and confirmability” (Wallick, 2001) as a final step in exhibiting acceptance of the study. Creswell (1998) also suggested that researchers “use the term verification instead of validity because verifications underscores qualitative research as a distinct approach, a legitimate mode of inquiry in its own right.”
To check the qualitative reliability of the research data and to verify accuracy, the researcher used two specific processes. First, the researchers had participants review the transcripts to assure that researcher and transcriptionist documents participant’s comments accurately. Second, the researcher had participants review the findings of the research for accuracy.

The researcher used several validity strategies to check research findings. Creswell & Creswell (2017) identified eight primary validity strategies for use in qualitative research. These eight strategies include triangulation, member checking, use of a rich, thick description, clarifying bias, presenting negative or discrepant information, spending prolonged time in the field, using peer debriefing, and using an external auditor.

The researcher used member checking, spent prolonged time in the field, and peer debriefing. To complete the member checking process, the researcher showed the major findings to the participants and ask for their feedback. The researcher spent prolonged time in the field to view how participants were using learning technologies to assure this type of technology was being used by the participants. Lastly, the researcher completed a peer debriefing with several other WLP practitioners who then shared their perspectives on research findings.

**Work Breakdown Structure**

In February 2016, the central Pennsylvania chapter of ATD gave its approval for its members to assist with this research. The chapter disseminated communication pertaining to the study via several means including emails, its newsletter, and
announcements at chapter meetings. Once I was given approval by my dissertation committee and the IRB to proceed, I used a specific work breakdown structure to guide my research. This work breakdown structure is located in Table 3-1.

Table 3-1
*Work Breakdown*

<table>
<thead>
<tr>
<th>Course-Type Task/Activity</th>
<th>Start Date</th>
<th>Duration (Days)</th>
<th>Finish Date</th>
<th>Brief Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final draft of proposal to committee members</td>
<td>4/14/16</td>
<td>1</td>
<td>4/14/16</td>
<td>Complete final draft of first 3 chapters of research proposal</td>
</tr>
<tr>
<td>Complete proposal defense</td>
<td>5/5/16</td>
<td>1</td>
<td>5/5/16</td>
<td>Present and defend proposal to doctoral committee</td>
</tr>
<tr>
<td>Apply for IRB and receive approval</td>
<td>5/5/16</td>
<td>21</td>
<td>5/26/16</td>
<td>Submit application to Penn State IRB and receive approval</td>
</tr>
<tr>
<td>Communication to potential participants</td>
<td>5/30/16</td>
<td>47</td>
<td>7/15/2016</td>
<td>Communicate with potential participants, receive agreement,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>schedule interviews</td>
</tr>
<tr>
<td>Collect data</td>
<td>7/18/16</td>
<td>76</td>
<td>9/30/16</td>
<td>Complete interviews and transcribing</td>
</tr>
<tr>
<td>Data analysis</td>
<td>10/3/16</td>
<td>119</td>
<td>1/30/17</td>
<td>Analyze collected data</td>
</tr>
<tr>
<td>Complete writing chapter 4</td>
<td>2/1/17</td>
<td>57</td>
<td>3/30/17</td>
<td>Write chapter 4: Results, discussion, etc.</td>
</tr>
<tr>
<td>Complete writing chapter 5</td>
<td>4/1/17</td>
<td>62</td>
<td>6/1/17</td>
<td></td>
</tr>
<tr>
<td>Course-Type Task/Activity</td>
<td>Start Date</td>
<td>Duration (Days)</td>
<td>Finish Date</td>
<td>Brief Description</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------</td>
<td>-----------------</td>
<td>-------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Write chapter 5:</td>
<td></td>
<td></td>
<td></td>
<td>Recommendations,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>conclusion, etc.</td>
</tr>
<tr>
<td>Complete final draft of</td>
<td>6/2/17</td>
<td>214</td>
<td>1/6/18</td>
<td>Submit final copy</td>
</tr>
<tr>
<td>dissertation</td>
<td></td>
<td></td>
<td></td>
<td>of dissertation to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>doctoral committee</td>
</tr>
<tr>
<td>Dissertation defense</td>
<td>2/6/18</td>
<td>1</td>
<td>2/6/18</td>
<td>Pass doctoral</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>dissertation defense</td>
</tr>
</tbody>
</table>
Chapter 4

RESULTS

Restatement of Study’s Purpose and Research Questions

The purpose of this follow-up study was to identify and explore specific changes in LTs, describe how these LT changes affect the day-to-day roles of WLP practitioners, describe the competencies that may have changed because of the role changes, and uncover how organizations are responding to these changing roles. Guiding this study were the following research questions:

Research Question (RQ1): How do WLP practitioners define learning technology?

Research Question (RQ2): What LT changes have occurred over the past five years?

Research Question (RQ3): How do these LT changes affect the competencies needed by WLP practitioners?

Research Question (RQ4): How do these LT and competency changes affect the day-to-day roles of WLP practitioners?

Research Question (RQ5): How are organizations responding to and supporting the LT and competency changes?

Profile of Participants

Participants were solicited through the membership directory of the central Pennsylvania chapter of ATD. Criteria for selection consisted of years of service in a WLP position, currently using multiple types of learning technologies, ability to discuss
and define different types of learning technology solutions, interest in research topic, and willingness to dedicate at least 2-3 hours of their time with researcher for interview and reviewing transcript.

To fulfill the criteria of years of service, the WLP practitioner needed to have at least two years of service utilizing multiple learning technology sources. Research participants were asked to clarify years of service before they participated in the research study.

Potential research participants were asked to share what types of learning technologies they were currently using. This helped researcher to get a mix of all types of learning technologies currently being used and why the organizations were using them.

Research participants were asked to describe the different learning technologies they were currently using. This assisted the researcher in getting a mixture of all types of learning technologies. It also helped the researcher to assure that participant was technology savvy.

Lastly, research participants were asked if they could commit at least 2-3 hours of their time so that they could be interviewed and thoroughly review the completed transcript of the interview.

The individuals selected and interviewed reflected diversity in characteristics such as gender, roles, and length of tenure in the roles, as depicted in Table 4-1.
The participants included nine females (75%) and three males (25%). The participants indicated that they had worked in their current positions anywhere from a couple years to 25 years. Three participants identified their work area as the financial industry. Three participants identified higher education as their field of work. Two participants identified consulting as their field of work. The remaining four participants held positions in general corporate environments.

The participants’ roles within their organizations varied. Although the participants’ roles varied, they all had started their careers as trainers. During their

<table>
<thead>
<tr>
<th>Participant</th>
<th>Gender</th>
<th>Current Job Title</th>
<th>Years in Training &amp; Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Female</td>
<td>Training Manager</td>
<td>10 years</td>
</tr>
<tr>
<td>P2</td>
<td>Female</td>
<td>Training Coordinator</td>
<td>15 years</td>
</tr>
<tr>
<td>P3</td>
<td>Female</td>
<td>Consultant</td>
<td>15 years</td>
</tr>
<tr>
<td>P4</td>
<td>Female</td>
<td>Project Manager</td>
<td>2 years</td>
</tr>
<tr>
<td>P5</td>
<td>Female</td>
<td>Training Manager</td>
<td>5 years</td>
</tr>
<tr>
<td>P6</td>
<td>Male</td>
<td>Director of LTMS</td>
<td>25 years</td>
</tr>
<tr>
<td>P7</td>
<td>Male</td>
<td>Professor, Consultant, Gamification Analyst</td>
<td>15 years</td>
</tr>
<tr>
<td>P8</td>
<td>Female</td>
<td>Director of Faculty and Staff Development</td>
<td>20 years</td>
</tr>
<tr>
<td>P9</td>
<td>Female</td>
<td>Training Manager</td>
<td>5 years</td>
</tr>
<tr>
<td>P10</td>
<td>Male</td>
<td>Education and Development Specialist</td>
<td>2 years</td>
</tr>
<tr>
<td>P11</td>
<td>Female</td>
<td>Curriculum Design and Development Specialist</td>
<td>2 years</td>
</tr>
<tr>
<td>P12</td>
<td>Female</td>
<td>Consultant</td>
<td>15 years</td>
</tr>
</tbody>
</table>
careers, these participants saw their roles gradually change within their organizations. Face-to-face interviews were held with the participants. The length of the interviews ranged from 47 minutes to 1 hour 12 minutes. Interviews were held between August and October 2016. The participants signed consent forms and agreed to have their interviews tape-recorded.

Before conducting and recording the face-to-face interviews, I provided the participants with information about confidentiality and anonymity. I explained my obligation to provide anonymity and confidentiality to the participants and assured participants that the information collected would be stored and presented with confidentiality and anonymity in mind. Patton (2002) noted distinctions between the terms confidentiality and anonymity, arguing that “confidentiality means you [the researcher] know, but won’t tell, while anonymity means [the researcher] you don’t know, as in a survey instrument” (p. 408).

A professional transcriptionist transcribed the recorded interviews. The completed transcripts were 27 to 44 pages in length individually. To check for accuracy, I read each transcript several times.

Method

I followed a series of steps in order to complete a general inductive analysis. In the first step, I performed data cleaning and formatted the raw data files into a common format with a uniform font size and margins; I also highlighted research questions and my interviewer comments and made a backup print copy of all transcripts. The second
step in performing this general inductive analysis was a close reading of the text. This reading helped me to become familiar with all content and gain an understanding of the themes and events covered in the text. The third step was the creation of categories. In this step, I identified and defined categories and themes. The upper-level categories were general and were identified after an initial reading of the materials. The lower-level categories were specific categories and were determined after multiple readings of the raw data, the transcripts. Finding lower-level categories is referred to as *in vivo coding*.

I used NVIVO (2018) computer software to analyze data and to make the coding process more efficient. In the fourth step, I applied the rules that are commonly assumed to underlie qualitative coding. The first rule is that one segment of text may be coded into more than one category. The second rule is that when the researcher comes across a considerable block of text, the researcher cannot assign a category because much of the text may not be relevant to evaluation objectives. In the last step of the process, I continued revising and refining the categories. I continued to search for subtopics, including contradictory points of view and new insights, and selected appropriate quotations that convey the core theme or essence of a category.

### Results

During the initial review of the data collected during the interviews, I focused on the responses the participants gave to the five research questions. The following section provides the responses and findings regarding each of the initial research questions.
Research Question (RQ1): How do WLP practitioners define learning technology?

The objective of the first question was to gain a better understanding of how WLP practitioners define learning technology. The interviews suggested that there are clear differences in how WLP practitioners define this term. One participant defined LTs as “tools and resources used to help others learn,” as shown below:

Learning technologies are the various tools and resources used to help others learn, whether mobile, remote, or in-house and can include cell phones, tablets, computers, or any other electronic device. (P1)

Another respondent defined the term as a “medium through which to deliver content,” as evident in the following response:

I will say it is the medium through which we deliver content. (P10)

Still another respondent defined it as closer to the online learning opportunities organizations use to train employees:

It is very difficult to really define that. Because, again, the knee jerk reaction is, well, it’s the online learning, it’s the WebExs, and webinars, and e-schools. And it’s not really limited to just that. (P5)

Based on responses gathered in this study, it appears as though additional research needs to be completed to help WLP practitioners to clarify the meaning of learning technology. Such a clarification would assist practitioners in gaining budgetary support from the C-suites for all of the different types of technologies needed within their organizations; building credibility by demonstrating that they understand the differences among tools, e-learning, systems, and software and hardware used in educating and developing staff; and communicating more effectively with outside partners about LTs.
Research Question (RQ2): What LT changes have occurred over the past five years?

I used the second research question to gather responses regarding the many changes that have occurred with LTs over the past five years. The respondents stated that the types of LT changes that have occurred over the past five years correspond to the overall objectives of their organizations. For example, several of the organizations sought to provide their employees with the capability to meet with other employees who work at remote locations without having to leave their home offices. To remedy this situation, the organizations began to use electronic meeting tools such as GoToMeeting (2018), Slack (2018), and Adobe Connect (2018). The focus for these organizations was to build efficiencies by giving employees the ability to meet or train at their convenience.

Participants responded in several different ways. Several participants responded by giving examples of how their roles have changed, as seen in the following quotations:

History has shown that most learning professionals have gone from administrative “doers” where department staff was being told what to do and what to train with little regard as to why…to strategic partners of the organization. (P1)

So as technology was introduced into all of this, not only did I have to rethink how much information I could share and be able to weed out what’s nice to know versus what’s essential, but also figure out how to create the interaction that is meaningful for a learner that they walk away with something without having me there being able to see the learning experience happen. (P2)

Several other respondents talked about the LTs that they felt have truly led to changes in the WLP field, as demonstrated by the following responses:

You're managing a project because you have so many pieces to e-learning and using technology, between multimedia and graphics and visual design. (P10)

So we went from, can you do a PowerPoint presentation and operate an overhead projector, to, okay, now we have software in addition to figuring out how to do a PowerPoint presentation, but now we have, you know, a webinar platform and
you've got to figure out how to use that webinar platform to take your material and change that. (P2)

Over the course of the interviews, many types of LTs were mentioned. The responses suggest that the types of LTs used by an organization is sometimes linked to the budget in place for developing the organization’s overall training and development strategies or goals. Some of the tools mentioned were WebExes, podcasts, TED Talks (2018), e-learning, games, webinars, videos, learning management systems, learning apps, electronic books, intranet platforms, virtual classrooms such as Moodle (2018), social platforms, discussion forums, interactive PDFs, Lynda.com (2008), VideoScribe (2018), GoAnimate (2018), gamification platforms, GoToMeeting (2018), and Adobe Connect (2018). LTs mentioned as useful in creating efficiencies within a team environment were Adobe Connect (2018), Slack (2018), and GoToMeeting (2018). Specific authoring tools for e-learning that were mentioned several times by the participants were Articulate Storyline (2016) and Adobe Captivate 2 (2016).

*Research Question (RQ3): How do these LT changes affect the competencies needed by WLP practitioners?*

The purpose behind RQ3 was to uncover how LT changes have affected the competencies that WLP practitioners must master and use in order to succeed in their positions. Specific competencies identified by research participants included: being a jack-of-all-trades, project management, organizational understanding, technological savvy, understanding of many LTs, understanding metrics and analytics, content development, understanding of mobile applications, and more. Several ideas appeared
consistently in the responses. One such idea was that respondents felt as if they needed to be “jacks-of-all-trades”:

Definitely being able to be a jack-of-all-trades and know how to multi-task and be able to do a little bit of everything and you have to know a little bit about everything and sometimes you have to know a lot about everything. (P12)

I had to become a jack-of-all-trades. I had to know how to troubleshoot an AV system. I had no background in AV systems. I don't know how that works. (P3)

In order to have respondents describe this role in more detail, I asked specific questions such as, “Can you clarify what you mean by the term ‘jack-of-all-trades’ and how that relates to competencies needed for WLP practitioners?” Participants did not hesitate to elaborate. The participants shared that when they began their careers, they were trainers in the sense that they would simply facilitate the trainings they were asked to facilitate. Participants explained that as new LTs emerged, they had to become designers of content, developers of platforms, and strategists who decide the types of learning activities that would best help their organizations meet their strategic goals.

Another aspect of the “jack-of-all-trades” term that participants shared was that they needed to learn how to be catalysts for change; practice agility since change is continuous; act as multi-taskers; move from one project to another several times within a week; and grow as lifelong learners since LTs have continued to emerge at a rapid pace.

Another consistent response to RQ3 was the need to have a thorough understanding of project management. Some responses were:

[C]ommunications, project management, organization, technical skill competency (P12)

Project management would be the number one—the number one competency, because if they can't do that then they won't survive. (P2)

Project management is very important. (P3)
I asked these participants to expand on why they feel project management is such an important competency for WLP practitioners. Participants explained that in their fast-paced environments, their roles mean that they are pulled into many projects that are completed simultaneously. These projects are sometimes system-wide, touching on all parts of the business. They also elaborated on their responses by suggesting that their roles as WLPs are more akin to strategic partners than they used to be when the WLPs were viewed as just trainers. The participants felt that as strategic partners, they have day-to-day roles that involve many types of projects at many levels and with many departments of their organizations. For example, one research participant stated:

A complete understanding of workplace learning, when each type of learning is important, how learners absorb the information or apply the skills and what kind of follow-up is done after the session. (P1)

When I probed this statement, the participant elaborated by saying that years ago she felt trainers were “order takers” and waited for departments to request training. In this response, the participant indicates that she views the trainer as more of a content developer. The participant explained that in this role, the trainer is not as interested in understanding how the employees as learners absorb or apply the information. She believes that trainers today have more knowledge of the different learning styles that employees may have.

Another major competency change has been in learning authoring tools. Authoring tools are used to create high-quality online courses. These tools allow for more interaction between content and learner. A response from one of the research participants that specifically reflects on the LTs used to develop learning activities that build more interaction between learners and the trainer is as follows:
And so the professionals who are helping others learn have to really gain
technology competence and understand how technology works such as authoring
tools. (P7)

Participants identified several types of e-learning authoring tools, including
PowerPoint add-ins, installed software desktop tools, and cloud-based e-learning software.
Participants stated that in years past, trainers used PowerPoint presentations and even
overhead projectors. Nowadays trainers create learning and development courses that can
be accessed online. This requires WLPs to have a strong understanding of authoring tools.
These authoring tools give learners the ability to connect with training at any place or time.
Specific authoring tools mentioned by participants included Adobe Captivate 2 (2016),

Several specific responses related to authoring are as follows:

Certainly the whole aspect of doing online presentations…(P2)

I think just being willing to learn a vast array of technology, but not just learning
technologies, learning some HTML. (P3)

[L]earning JavaScript and variable programming…(P10)

[V]ideo acumen, because online video is huge…(P7)

E-learning authoring, so understanding how to use e-learning authoring tools so
that you can show a potential employer a few examples from different tools…(P3)

Elaborating on many great e-learning authoring tools on the market, several
participants stated that each tool has its own pros and cons for the participants’ usage.
Participants agreed that how a trainer uses an authoring tool depends on his or her
organization’s specific requirements for e-learning programs.

Another competency mentioned by several participants was that of a strong
understanding of learning management system administration. Several participants
mentioned that their organizations use learning management systems to house and track
employee development efforts. With this in mind, WLPs need to have a firm understanding of learning management systems and administration. Specific responses that focused on learning management system competency include:

[A]dministration of a learning management system…(P2)

Know what is an LMS, what does it do, what are its capabilities, how does it function, you know, all of those kinds of stuff, because these courses that you create have to go into a learning management system, so you kind of have to understand that. (P7)

Steady knowledge about the latest technologies and learning management systems available and how to deal with the administration of such a system…(P8)

As this type of research continues to uncover new types of LTs and software WLP practitioners must use and master, future research should seek to identify how to educate and prepare WLP practitioners for such changes in competencies.

**Research Question (RQ4): How do these LT and competency changes affect the day-to-day roles of WLP practitioners?**

Participants shared many stories about how their roles in the WLP field have changed over the years. Role changes expressed by the participants are listed in Table 4–2.

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst</td>
<td>Participants spoke of this role in two ways: (1) analyzing performance gaps and (2) analyzing “big data.”</td>
</tr>
<tr>
<td>Designer</td>
<td>As a designer, a WLP practitioner determines the content that goes into the learning activities. In this role, the WLP</td>
</tr>
<tr>
<td>Role</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Instructor/trainer</td>
<td>The WLP practitioner facilitates learning face-to-face, via live broadcast, or through LTs used for remote learners.</td>
</tr>
<tr>
<td>Developer</td>
<td>The WLP practitioner uses many different software programs and applications to develop interactive training programs.</td>
</tr>
<tr>
<td>Evaluator</td>
<td>As leaders push to show the “value” of each training effort, a WLP practitioner must have the ability to measure the success of course objectives and LTs.</td>
</tr>
<tr>
<td>Technologist</td>
<td>The WLP practitioner must be tech-savvy and keep up with continual changes in technology.</td>
</tr>
<tr>
<td>Organization change agent</td>
<td>The WLP practitioner must act as catalyst for change. Technologies change so quickly, and employees must be early adopters.</td>
</tr>
<tr>
<td>Strategist</td>
<td>Strategic thinkers are business-savvy and have a seat at the C-suite table.</td>
</tr>
<tr>
<td>Jack-of-all-trades</td>
<td>As a jack-of-all-trades, the WLP practitioner must be able to continually move in and out of the many roles he or she plays within the organization.</td>
</tr>
<tr>
<td>Project manager</td>
<td>As a project manager, the WLP practitioner is responsible for planning, organizing, managing, and executing a project to its successful completion.</td>
</tr>
<tr>
<td>Coach</td>
<td>The WLP practitioner must coach both internal employees of the organization and external clients on how to use new technologies.</td>
</tr>
</tbody>
</table>
Several specific responses from the participants to RQ4 that pertain to the different roles listed in Table 4-2 above are as follows:

History has shown that most learning professionals have gone from administrative “doers” where department staff was being told what to do and what to train without little regard as to why…to strategic partners of the organization. (P1)

Learning professionals need to be strategic, business-savvy, and have a seat at the leadership table. (P1)

[C]oach clients when things are not going right, technologically speaking…(P3)

[H]asn't happened as rapidly as you'd like, and some pockets are bigger than others, but understanding metrics and analytics…(P7)

You're managing a project because you have so many pieces to e-learning and using technology, between multimedia and graphics and visual design. (P10)

The jack-of-all-trades is probably one of the key things, is that all of a sudden—and I've seen this in two organizations. (P10)

As LTs continue to gain momentum, organizations will need to understand the different roles WLP practitioners hold and take appropriate steps to recruit, educate, train and retain employees in these roles.

*Research Question (RQ5): How are organizations responding to and supporting the LT and competency changes?*

The purpose of RQ5 was to gain information on how WLP practitioners feel their organizations are responding to the practitioners’ changing competencies and roles. Participants varied in their responses, with some participants speaking about how their organizations support the purchase of LTs and others responding to how the organization supports the WLP practitioner role. Responses that reflected on how organizations support the WLP practitioner role include:
The biggest way to gain support [as a WLP practitioner] is show them [leaders] what’s in it for them (WIIFM)—what benefits will their department or team or the organization as a whole experience as a result—then once they buy-in to these benefits, the biggest thing is to deliver those said results. (P1)

I was fortunate that I had a supervisor that wanted to support my work and wanted it to be successful, so she was willing to listen to my suggestions on how to advance my profession. (P2)

And then also the president values professional development. He even attends some of these things himself. (P8)

Direct responses pertaining to the how organizations support the need for LTs include:

Organizations truly need to be learning-driven and embrace learning technologies at all levels of the organization from top leadership to the laborers on the floor; everyone needs to be encouraging, participating and leading learning opportunities. (P1)

However, if training is to have its biggest impact then everyone has to get involved in the before and after activities of a training initiative and sustain the learning long after the events took place. (P1)

Make a compelling case on the value that the learning technology will bring to the individual, department, and overall organization. (P8)

Overall, the participants had positive responses about how their organizations and supervisors support their positions as WLP practitioners. The only negative comments were in regards to the overall workload. Most of the participants stated that their positions were overloaded with many different projects going on at one time. Although the respondents shared basic comments about how they felt their organizations have supported their efforts, there were critical elements that didn’t come out in the interviews. One very important factor was that none of the respondents talked about how his or her organization was budgeting appropriately to meet learning needs of the future.

In 2015, ATD completed a survey entitled *Learners of the Future: Taking Action Today to Prevent Tomorrow’s Talent Crisis*. In this survey, research participants were asked to list barriers to learning and development’s future readiness. Fifty-three percent of
respondents cited deficient learning budgets as a roadblock to future learning effectiveness. In this same survey, 46% of respondents identified the lack of an information-technology infrastructure sufficient to support the technologies required to meet future learning needs. The failure to link learning and business strategies was also noted in this survey.

Summary of Findings

Study conclusions are based on the responses given by the 12 interview participants. The following points are the four most important findings gathered from this study:

1. WLP practitioners do not recognize a uniform definition for the term learning technology.
2. Learning technologies continue to expand into areas such as simulation, gamification, and more interactive learning opportunities.
3. With the increase in learning technologies, WLP practitioners will need to master additional competencies such as project management, strategy, data analysis, and technology know-how.
4. WLP practitioners fulfill many different roles within their organizations. These roles continue to change with the introduction of new learning technologies. The newer roles described by research participants include project manager, strategist, data analyst, technologist, change agent, coach, and evaluator. Several respondents referred to themselves as jacks-of-all-trades, which is a term that represents the many roles they fulfill as WLP practitioners.

Implications for the WLP Field

Two of the main conclusions of this research are that LTs have changed, and will continue to change, the roles of WLP practitioners. The roles listed in Table 4-2 are but a fraction of the many roles WLP practitioners play. The main reason for the continued
change and addition of new roles is the ever-increasing use of LTs. As the speed of
development of LTs continues at a fast pace, organizations will continue to build LT
infrastructures to support learning and development strategies to meet the organizations’
strategic goals.

Although LTs continue to expand and change the roles of WLP practitioners,
these practitioners will need to master new competencies in order to be successful in their
roles. These competencies are specific to the new functions of the role such as business
strategist, project manager, data analyst, and technologist. Organizations need to budget
for practitioners to attend conferences, schools, and other forums by which they can
participate in formal and informal education and training that will help them to master
these competencies.

WLP practitioners will need to use more adaptive learning methodology that
breaks traditional learning models and allows employees to learn at their own pace.
Adaptive learning is quite frequently used learning technology advanced environments.
In this environment, the trainer gathers as much information as possible on individual
students and what they need to learn. Younger generations entering workforces for the
first time will want more flexibility and interaction used with learning technologies.

As the WLP practitioner role continues to change, the new focus as business
strategist will continue to increase. The learning of the future must be closely aligned to
overall corporate strategies to assure the company achieves outlined strategic results.
This means that any learning technology investment should involve input from business
leaders to ensure that learning is driving retention, engagement, and performance.
Another area WLP practitioners need to expand their knowledge in is the area of mobile learning. Mobile has transformed the way companies work, interact and collaborate. Younger generations use all types of mobile functionality to complete training when and where they can, giving them 24/7 accesses to training programs. Most companies recognize that moving toward mobile learning is a necessity; however, most organizations do not understand how to execute a mobile strategy. WLP practitioners can play an important role in building a mobile strategy.

WLP practitioners will be to learn to measure the effectiveness of the training programs they provide. They will need to gain extensive knowledge on how companies determine metrics for measurement that include both business metrics and learning/HR metrics. Many companies will also look for the WLP practitioner to be part of a team which develops solutions of employee engagement, retention and turnover rates.

WLP practitioners will also need to understand and embrace social media tools and social collaboration tools to better engage employees and foster a strong learning culture. WLP practitioners need to understand specific ways to use these tools for learning and development of the workforce. Most companies are using document sharing, discussion forums, and blogs, but they aren’t necessarily using the advantages of video or microblogs.

Lastly, LTs such as learning management systems and the additional hardware and software needed to run specific types of software, including authoring and design platforms, usually come with costly price tags. Organizations must begin to develop sufficient budgets to handle all of their technology needs.
Additional Research Needed by the WLP Field

These research findings show that more in depth research is needed to clarify the definition of learning technology and the changes in learning theories due to multigenerational workforces.

Participants of this research study gave many different definitions for learning technologies. Definitions included many parts of the term learning technologies such as software and hardware used by WLP practitioners, mediums used to transfer the learning technology, and included reasons for using different learning technologies for different generations housed in one workforce.

After completing this research, I believe the definition of learning technology should include the type of learning technology used including both computer hardware and software, the purpose for using learning technology, and the mediums through which the learning travels. For example, the definition I use for learning technologies is:

any type of computer or electronic hardware and software used in a learning environment and transmitted through different mediums to share learning material for the purpose of educating learners.

This additional research should also examine how WLPs must approach learning and learning technologies within multigenerational employee groups. This research should focus around research questions pertaining to how many various generations are within the workforce; determining the learning preferences and differences that may exist between and within each generation; and, determining how best to structure training for multigenerational learners to enhance learning for all.
Each generation within a workforce has different learning preferences and motivators driven from the dominant mode of pedagogy each generation experienced in the classroom growing up. Each of these generations also experienced different types of learning technologies. In the past 50 years there has been a dramatic shift from broadcast lecture learning where the teacher or trainer is the focal point of learning to interactive/collaborative learning where the student is the focal point of learning. This shift in pedagogical approach should be explored in more detail. Understanding these changes will help WLP practitioners be better prepared to assist with the learning needs of all generations housed within one workforce.

Another area of interest that should be researched in more details is the impact of social media on the role of WLP practitioners. Many organizations saw the beginning of social media being used as a means for training when Generation X, those born between the years of 1965 and 1980, began to enter the workforce. People born within Generation X much prefer computers over books. As Generation Y, those individuals born between 1980 and 2000, entered the workforce training began to include much more integration of technology which included social media such as Twitter, Snapchat, Vine, and Emojis to name a few. Generation Z, those individuals born between 1995 and 2012, will bring its own changes to the learning environments and will challenge WLPs to be more tech savvy than ever before since Generation Z is the first generation that always had the internet. Generation Z is the generation who will really utilize the full potential of social media as a learning and training tool.
REFERENCES


# APPENDIX

## Learning Technologies

### Interview Protocol

<table>
<thead>
<tr>
<th>No.</th>
<th>Theme</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>Please tell me about yourself.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tell me about your role at work.</td>
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<tr>
<td></td>
<td></td>
<td>What are your duties and responsibilities?</td>
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<tr>
<td></td>
<td></td>
<td>Tell me about your workplace environment (culture).</td>
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<tr>
<td></td>
<td></td>
<td>How long have you been in your current position?</td>
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<tr>
<td>2</td>
<td>Defining Learning Technologies</td>
<td>What is your definition of learning technologies?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Please tell me what kind of learning technologies you’ve experienced in your workplace.</td>
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<td></td>
<td>Please tell me about experiences with learning technologies from the overall organization perspective.</td>
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<tr>
<td>3</td>
<td>Types of Learning Technologies Used By Your Organization</td>
<td>Describe the types of learning technologies used by your organization.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- What outcomes will the organization hope to accomplish by having these particular learning technologies in place.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- What factors lead to these specific learning technologies to be implemented?</td>
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<tr>
<td></td>
<td>Proposal Research Question</td>
<td><strong>Research Question (RQ1):</strong> How do WLP practitioners define “learning technology”?</td>
</tr>
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<td>No.</td>
<td>Theme</td>
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</table>
| 4   | Success Factors for Learning Technology   | Think of one example of a high-point experience with a particular learning technology tool. What happened that enabled the highest levels of effectiveness and success with that tool?  
- What was the background situation, circumstance or context that led up to the critical incident you have in mind?  
- How were you or the organization able to accomplish this success?  
- What was the specific result or outcome of implementing the learning technology you described, and on reflection why do you perceive/judge this to be an example of effective or successful implementation? |
| 5   | Failure Factors for Learning Technology   | Think of one example of a low-point experience with a particular learning technology tool. What happened that hindered the success or effectiveness with that tool?  
- What was the background situation, circumstance or context that led up to the critical incident you have in mind?  
- How did your organization react to this failure?  
- What was the specific result or outcome of the failure of this learning technology tool? |
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<tr>
<th>No.</th>
<th>Theme</th>
<th>Questions</th>
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</thead>
</table>
| 6   | Success Factors for Learning Technologies with Creativity and Innovation | Think of one example of a high-point experience with one of your learning technology implementation that allowed the organization to use more creativity with learning technology tools? What happened that enabled the creativity or innovation?  
  - What was the background situation, circumstance or context that led up to the critical incident you have in mind?  
  - How exactly was the organization able to have more creativity and innovation with the particular tool?  
  - What specific results or outcomes was the organization able to gain with the creativity and innovation? |
| 7   | Learning Technology Challenges | Tell me about several of the challenges your organization faces when selecting, implementing and measuring learning technology? Select a particular challenge with learning technology that you or your organization has faced by answering the following questions.  
  - What was the background situation, circumstance or context that led up to the critical incident you have in mind?  
  - What and in what way exactly did the challenge occur?  
  - What was the specific result or outcome of the ‘critical incident’ that you have described, and on reflection why do you perceive/judge this to be an example of a challenge for learning technologies? |
| 8   | Factors leading to successful implementation of learning technologies | Describe what you believe are factors to take into consideration when implementing learning technologies that will lead to positive outcomes.  
  - What is needed from the WLP professionals?  
  - What is needed from the learners (employees)?  
  - What is needed from the organization? |
## Proposal Research Question

**Research Question (RQ2):** What LT changes have occurred over the past five years?

### Role Transitioning Factors

<table>
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<th>No.</th>
<th>Theme</th>
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<tr>
<td></td>
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<td><strong>9</strong> Competencies</td>
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<td></td>
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<td><strong>10</strong> Training and Education</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>11</strong> Role Transitioning</td>
</tr>
<tr>
<td>No.</td>
<td>Theme</td>
<td>Questions</td>
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</tbody>
</table>
| 12  | Organization Support For Role Transition | Describe how your organization supports (or doesn’t support) the transition of your role.  
• What types are plans are built to provide you with the tools you need to be successful at your new role?  
• How do you gain support from the executive level?  
• What are the biggest challenges with the transition to your new role? |
|     | Proposal Research Question(s) | **Research Question (RQ3):** How do these LT changes affect the competencies needed by WLP practitioners?  
**Research Question (RQ4):** How have these LT and competency changes transitioned the day-to-day roles of WLP practitioners?  
**Research Question (RQ5):** How are organizations responding to and supporting the LT changes and competencies needed? |

### Implementing Learning Technologies

<table>
<thead>
<tr>
<th>No.</th>
<th>Theme</th>
<th>Questions</th>
</tr>
</thead>
</table>
| 13  | Budgeting for Learning Technologies | How does the organization decide which learning technologies to implement?  
• How are new learning technologies selected?  
• Who is involved with the selection of new learning technologies?  
• How does the organization budget for the new learning technologies? |
|     | Proposal Research Question | **Research Question (RQ5):** How are organizations responding to and supporting the LT changes and competencies needed? |

**Final Thoughts**
<table>
<thead>
<tr>
<th>14</th>
<th>Concluding Remark</th>
<th>What comment do you have that perhaps we haven’t addressed in our interview yet?</th>
</tr>
</thead>
</table>

**Recruiting Participants**

| 15 | Could you please recommend any other WLP professionals who have experienced implementing new learning technologies and have seen their role transition over the years. |

*Thank you for participating in the interview.*
VITA

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