

# Glossary

## A

**Accelerated learning:** A process that results in long-term retention by the learner. This is accomplished by honoring the different learning preferences of each individual learner and using experiential learning exercises (such as role plays, mnemonics, props, and music).

**Active learning:** A wide variety of strategies in which learners are engaged mentally, physically, and emotionally so that what is learned is acquired largely through their own activity instead of frontal teaching.

**Active listening:** A form of listening that differentiates between the cognitive and emotional content of the message and communicates these to the speaker. An active listener makes inferences regarding feelings expressed by the speaker while listening and reflects these back for verification (Reynolds, 1993).

**ADDIE:** An instructional systems development model that comprises five phases:

- **Analysis** is the examination of the training required and generally answers the who, what, where, when, why, and by whom questions to prepare for the design phase.
- **Design** is the planning stage to formulate a plan, or outline, and learning objectives for the training.
- **Development** is the phase in which training materials and content are selected and developed based on learning objectives.
- **Implementation** is when the course is taught and delivered.
- **Evaluation** is the ongoing process of scrutiny to measure and constantly improve instructional efforts during and following implementation. This last phase provides data that is incorporated into the analysis phase.

**Adult learning theory:** A term that encompasses the collective theories and principles of how adults learn and acquire knowledge. Popularized by Malcolm Knowles, adult learning theory provides the foundation that WLP professionals need. (See also *Andragogy*.)

**Affective learning:** Acquisition of knowledge based on Benjamin Bloom's taxonomy in which he identified three learning domains: cognitive (knowledge), affective (attitude), and psychomotor (skills). This taxonomy or classification of the processes of thinking and learning provides the framework for the creation of instructional strategies, materials, and activities used to improve individual workplace learning and performance. Affective refers to the learners' outlook or mindset.

**After action review (AAR):** Intense follow-up sessions used to better understand what happened in an event and what should have happened. Feedback in AARs can include raw material, such as recorded plays and timelines; analysis (what happened and why at a thematic level); coaching on how to get better results next time; evaluation (how ready the player is to handle a more complex situation); and even game elements like a high score or rewards and recognition to spur competition and replay or redo.

**Analysis:** The breaking up and examining of parts of a whole. In workplace learning and performance, these are some common analyses:

- **Gap analysis** identifies the discrepancy between the desired and actual performance or results.
- **Root cause analysis** identifies the true cause(s) of the gap between desired and actual knowledge, skills, and performance.
- **Job analysis** identifies all duties and responsibilities and the respective tasks done on a daily, weekly, monthly, or yearly basis that make up a single job function or role.
- **Needs analysis** is the process of collecting and synthesizing data to identify how training can help an organization reach its goals.
- **Task analysis** is the process of identifying the specific steps required to correctly perform a step within a job.

**Andragogy:** The adult learning theory popularized by Malcolm Knowles. Andragogy (from the Greek meaning "adult learning") is based on five key principles that influence how adults learn: self-concept, prior experience, readiness to learn, orientation to learning, and motivation to learn. (See also *Adult learning theory*.)

**Appreciative coaching:** A process of discovery centered on a topic that is based on Appreciative Inquiry Theory. Through positively focused inquiry, the coach can be a

catalyst for retelling stories, reinterpreting reality, and creating a dream for a different future. This act of telling a new story in and of itself begins the process of change. To accomplish this coaching process, the coach follows a cycle with four distinct parts: discovery, dream, design, and destiny.

**Appreciative Inquiry (AI) Theory:** An approach to large-scale organizational change that involves the analysis of positive and successful (rather than negative or failing) operations. The AI 4-D cycle (discovery, dream, design, and destiny) includes identifying areas for improvement, analyzing previous successes, searching for solutions, and developing an action plan.

**Assessment:** The process used to systematically appraise a learner's skill or knowledge level.

**ASTD Certification Institute (ASTD CI):** The independent body that establishes standards and issues credentials for the workplace learning and performance profession.

**ASTD HPI model:** A results-based, systematic process used to identify performance problems, analyze root causes, select and design performance solutions, manage solutions in the workplace, measure results, and continually improve employees' performance within an organization.

**Asynchronous learning:** A type of just-in-time, on-demand learning that includes self-paced computer-based training (CBT), using CD-ROMs, or, more frequently, recorded synchronous e-learning events, such as webinars. Learners are hearing, observing, and applying the instruction at different times, not synchronously.

**Authoring tools:** Special software programs that allow a content expert to interact with the computer in everyday language to help develop computer-based training (CBT) courseware.

**Aviation Industry CBT Committee (AICC):** An international association of technology-based training professionals. The AICC develops guidelines for the aviation industry on the development, delivery, and evaluation of computer-based training (CBT) and related training technologies.

## **B**

**Balanced scorecard:** A model for measuring effectiveness from four business perspectives: the customer perspective, the innovation and learning perspective, the internal business perspective, and the financial perspective.

**Bandwidth:** The speed at which information is transferred via modem or other network-access device to Internet users. The greater the bandwidth, the more quickly the data (audio, video, text, and so forth) reach the user.

**Behavior:** The activity or task that produces an accomplishment.

**Behavioral coaching:** The underlying assumption of behavioral coaching that human beings respond to stimuli, sustain behaviors that are pleasurable, and cease behaviors that produce pain. People's actions represent a continuous process of selecting among alternatives that bring rewards or punishment. The role of the coach is to create a clear understanding for the employee of the performance that is expected, the rewards that will come from satisfactory achievement, and the penalties that will come with failure to achieve.

**Behaviorism:** The learning theory usually associated with psychologist and author B.F. Skinner that applies to psychology focused on observable and measurable behavioral change and that stresses the role of the environment as a determinant of behavior.

**Benchmarking:** An evaluation of one's own practices and comparison with another company's. Benchmarking is frequently used in the quality process (Reynolds, 1993).

**Blended learning:** The combination of multiple approaches to learning. In the strictest sense, blended learning refers to any time that two methods of delivery of instruction are used. A typical example of this would be a combination of e-learning and in-person, instructor-led training sessions.

**Blog:** Short for weblog, an online journal or diary containing a chronological log of thoughts and ideas that is regularly updated and published on a webpage.

**Bloom's taxonomy:** Benjamin Bloom's classification of three learning domains: cognitive, psychomotor (behavioral), and affective; sometimes referred to as KSAs (knowledge, skills, and attitude). This taxonomy or classification of the processes of thinking and learning provides the framework for the creation of instructional strategies, materials, and activities used to improve individual workplace learning and performance.

**Branching story:** An educational simulation genre in which students make a series of multiple-choice decisions to progress through and affect an event (or story).

**Browser:** A software application that displays webpages, originally written in the text-based HTML language, in a user-friendly graphical format.

**Business analysis:** The process of identifying and clarifying primary organizational goals, targets, or needs.

**C**

**Career development:** A planned, structured process of interaction between a representative of the organization and the individual. Career development enables employees to grow within an organization and results in their optimal utilization (Reynolds, 1993).

**Cause-and-effect analysis:** An analytical tool that reveals the root causes of problems by displaying the relationships between the reasons or sources and the result. It may demonstrate that the root cause originates far from where the problem occurs.

**Certification:** The awarding of a credential that acknowledges that an individual has demonstrated proof of a minimum level of knowledge or competence, as defined by a professional standards organization. Professional certification can be used as verification of an individual's skills and knowledge.

**Challenge and rescue:** Instructional strategies that are designed to engage learners, avoid passive information presentations, and individualize learning experiences by putting authentic challenges first and presenting information only to rescue learners who need or request help.

**Change agent:** The person responsible for facilitating, coordinating, and implementing a change effort within an organization. The person who intentionally or indirectly causes or accelerates an organizational, social, cultural, or behavioral change.

**Change leader:** The person responsible for developing, leading, and supporting a change effort within an organization.

**Change management:** A process whereby organizations and individuals proactively plan for and adapt to change (Reynolds, 1993).

**Chunk:** A discrete portion of content, often consisting of several learning objects grouped together as a way to improve learner comprehension and retention. A trainer should break down and group, or chunk, larger pieces of information into smaller, easier-to-process components.

**Coaching:** A process in which a person, or coach, provides a worker or workers with constructive advice and feedback with the goal of improving performance. (See also *Mentoring*, which focuses on career development and advancement.)

**Codec:** A device used for video teleconferencing. A camera's video signal is fed into an electronic box called a codec (short for coder/decoder). The codec converts the audio-visual signals into digital information. The information is then sent, over high-capacity

phone lines, to remote sites. Once the remote sites have received the digital information, the codec at each site converts the digital signal back to a signal that can be displayed on a television monitor.

**Coding:** In computer programming, the arrangement of information for storage or input in which letters, digits, and so forth correspond to binary numbers; also the set of instructions in the program.

**Cognitive:** The mental process of knowing something through perception, reasoning, or intuition.

**Cognitive learning (or cognitivism):** A “tell” approach to learning based on the theory that learning occurs through exposure to logically presented information, usually involving lecture. It can also include diagrams, videos, films, panels, class presentations, interviews with subject matter experts (SMEs), readings, debates, and class studies.

**Community of practice (CoP):** A group of people who share a common interest in an area of competence and are willing to share the experiences of their practice with one another.

**Competency:** Observable behavior that is based on specific knowledge, skills, and attitudes that relate to performance.

**Computer-based training (CBT):** An umbrella term for the use of computers in both instruction and management of the teaching and learning process. Computer-assisted instruction (CAI) and computer-managed instruction (CMI) are included under the heading of CBT. Some people use the terms CBT and CAI interchangeably.

**Conative (conation, conative):** The aspect of mental or behavioral processes that are directed toward action or change and include impulse and desire, volition, and striving.

**Concept:** A group or category of examples with a set of common identifying attributes and a label (concept name). Examples of concepts can be physical objects, or abstractions. You manipulate examples of a concept, so you can identify, classify, generate, group, or synthesize examples of a concept.

**Conditions of learning:** Robert Gagné’s theory of nine instructional events that help ensure learning occurs. The nine events are

1. Gain the learners’ attention.
2. Share the objectives of the session.
3. Ask learners to recall prior learning.
4. Deliver content.

5. Use methods to enhance understanding (for example, case studies or graphs).
6. Provide an opportunity to practice.
7. Provide feedback.
8. Assess performance.
9. Provide job aids or references to ensure transfer to the job.

**Consultant:** A person who provides needed information, help, and perspective. Consultants may be employees of an organization (internal) or under contract with the organization (external) because of competence, status, reputation, or experience. Strictly, this term should not be used to describe a person from outside the organization who only provides instruction (Reynolds, 1993).

**Content-centric design:** A paradigm that concentrates on content and its presentation; the counterpoint to individualization or learner-centric design.

**Correlation:** A measure of the relationship between or among two or more variables; if one changes, the other is likely to make a corresponding change. If such a change moves the variables in the same direction, it is a positive correlation; if the change moves the variables in opposite directions, it is a negative correlation.

**Cost-benefit analysis:** A method of evaluating the implications of alternative human resource development plans. Cost-benefit analysis determines whether a project will save an amount equal to or greater than its cost and lost opportunities. A technique for assessing the relationship between results of outcomes of human resource development programs and the cost required to produce them (Reynolds, 1993).

**CPLP (Certified Professional in Learning and Performance):** A professional credential offered by the ASTD Certification Institute (ASTD CI) to workplace learning and performance professionals.

**Credentialing:** A process that grants recognition and a credential upon a person, organization, program, product, or service after certain criteria have been met and verified. Examples of credentialing programs include certification, accreditation, and licensure.

**Criterion reference:** A system of training developed by Robert Mager in which results are measured by the learner's ability to meet specified performance objectives (criteria) upon completion.

**Criterion validity:** The extent to which an assessment can predict or agree with external constructs. Criterion validity is determined by looking at the correlation between the instrument and the criterion measure.

## D

**Data:** Items of information, facts, or statistics organized for analysis.

**Data collection:** A frequently used term in the WLP profession that refers to the gathering and compiling of all data that are used for analysis. Some examples of data collection methods or tools are examination of in-house and external written sources, questionnaires, interviews, observation of trainees or jobholders, and experiments of training approaches.

**Declarative knowledge:** The facts, concepts (categories), and principles (if...then relationships) that people use to make sense out of the world.

**Design matrix:** A framework or skeleton for a course that is used to visualize a course or session. It enables course designers to take a broad view of what to accomplish and how to meet the learning outcomes. The design matrix consists of four parts: duration, content or learning points, methods or activities, and materials or aids. It is used to identify and sequence content subtopics, estimate the amount of time devoted to each subtopic, consider the methods to communicate the content, and identify potential training materials and aids.

**Development:** Learning or other types of activities that prepare a person for additional job responsibilities and enable him or her to gain knowledge or skills. It may also refer to the creation of training materials or courses. (See also *ADDIE*.)

**Distance learning:** An educational situation in which the instructor and learners are separated by time, location, or both. Education or training courses are delivered to remote locations via synchronous or asynchronous means of instruction.

**Domains of learning:** The three domains into which instructional activities can be placed. They include cognitive, psychomotor, and affective (Reynolds, 1993). (See also *Bloom's taxonomy*.)

## E

**Effect size:** A way of quantifying the difference between two groups using standard deviation. For example, if one group (the treatment group) has had an experimental treatment and the other (the control group) has not, the effect size is a measure of the difference between the two groups.

**E-learning:** A term that covers a wide set of applications and processes, such as web-based learning, computer-based learning, virtual classrooms, and digital collaboration. Delivery of content may take place via the Internet, intranet or extranet (local area

network [LAN] or wide area network [WAN]), audio- and videotape, satellite broadcast, interactive television, CD-ROM, and more.

**Emotional intelligence:** A form of intelligence as defined by Howard Gardner's multiple intelligence theory. It refers to an ability to accurately identify and understand one's own emotional reactions and those of others and is related to personal qualities, such as self-confidence and motivation. The emotional intelligence theory was developed by Daniel Goleman in the 1990s and popularized in his book *Emotional Intelligence*.

**Evaluation:** A multi-level, systematic method used for gathering information about the effectiveness and impact of training programs. Results of the measurements can be used to improve the program, determine whether learning objectives have been achieved, and assess the value of the training to the organization. These are Donald Kirkpatrick's four levels of evaluation and Jack Phillips's fifth level of evaluation:

- **Level 1** measures reaction and planned action. Level 1 evaluation instruments are often referred to as "smile sheets" and indicate how well the training was received by participants—did they like the trainer, did they like the content, did they like the method of training, and so forth. It also indicates how participants plan to apply what they have learned during training.
- **Level 2** measures learning. It provides indicators of an employee's knowledge, skills, and abilities related to job requirements. It also provides information to enable employees to assess whether they have the knowledge of work policies and procedures that will enable them to perform their duties. It may be completed using a self-assessment, test, or observation.
- **Level 3** measures on-the-job application. This is a higher level of evaluation that determines whether or not the skills and knowledge have transferred to the job and whether or not an employee's performance has changed as a result of training.
- **Level 4** measures business impact. Accountability for training is measured against business needs such as efficiency, customer needs, ability to establish priorities, changes in profits or sales, savings, and so forth. These results may be reflected in reports, performance, and budget.
- **Level 5** measures return-on-investment (ROI) and is another level of evaluation that compares the monetary benefits of training programs with the program costs. It is usually presented as a percentage or cost-benefit ratio.

**Executive coaching:** A form of coaching for executives. Coaches who work at the executive level need a broad understanding of business principles as well as a firm grounding in personal and organization development.

**Exemplar:** A term used by Thomas Gilbert, Joe Harless, and other performance pathfinders that refers to an employee who is an outstanding performer in at least one area. Some approaches also refer to this as a key performer. The purposes of studying an exemplar are to better understand the tasks, identify possible root causes, and determine quick ways to improve performance for others (by copying elements from the exemplar).

**Experiential learning:** A form of learning that occurs when a learner participates in an activity, reviews the activity, identifies useful knowledge or skills that were gained, and transfers the result to the workplace.

**Experiential learning activities:** Inductive learning through a five-stage cycle: experiencing (complete an activity), publishing (share observations of what happened), processing (interpret why the activity unfolded as it did), generalizing (connect what happened to real life), and applying (plan for change or next steps) the content learned in the activity to real life.

**Explicit knowledge:** A type of knowledge that includes information that has been documented or can be shared with someone. (See also *Formal knowledge*.)

**Extant data:** A category of data that comprises existing records, reports, and information that may be available inside or outside the organization. Examples include job descriptions, competency models, benchmarking reports, annual reports, financial statements, strategic plans, mission statements, staffing statistics, climate surveys, 360-degree feedback, performance appraisals, grievances, turnover rates, absenteeism, suggestion box feedback, accident statistics, and so forth.

**External consultant:** An individual who is hired from outside an organization to assist a client achieve a stated outcome. The assistance can come in the form of information, recommendations, or hands-on work.

**Extrinsic feedback:** A judgment (for example, correct or incorrect) that does not demonstrate the consequences of a learner's response.

## F

**Facilitation:** The practice of guiding or making learning easier, both in content and in application of the content to the job.

**Fact:** Information that is recalled and used exactly as it was learned, without any transformation. People *state* facts.

**Focus group:** A facilitator-led group of participants that is convened for a specific purpose, usually related to gathering information about an organizational challenge, problem,

or opportunity. Focus groups may meet only once or continually, depending on their character (Reynolds, 1993).

**Forcefield analysis:** A diagnostic tool developed by Kurt Lewin to assess two types of forces related to introducing change in organizations: driving and restraining. Driving forces are those that help implement the change, whereas restraining forces are those that prevent the change.

**Formal knowledge:** Information that can be documented in some manner and made available to various publics in the form of publications, patents, reports, and so forth. (See also *Explicit knowledge*.)

**Formative evaluation:** The evaluation of material conducted during its early developmental stages for the purpose of revising materials before widespread use. Formative evaluation is conducted during the development phase of ISD (Reynolds, 1993).

**Front-end analysis:** A term credited to Joe Harless that refers to performance analysis. Typically, performance analysis includes carrying out a business analysis (or identifying key organizational priorities); identifying performance gaps (expressed in terms of accomplishments or outcomes, not behavior); completing a task analysis, which identifies what performers do to achieve the outcome; performing a cause analysis; and usually identifying a key performer or exemplar.

## G

**Game elements:** Techniques that motivate people to want to engage in an experience, outside of any intrinsic motivation. Game elements include fantasy, whimsy, competition, beauty, and a great story.

**Goal:** An end state or condition toward which human effort is directed.

## H

**Hard data:** Objective and measurable quantitative measures that can be stated in terms of frequency, percentage, proportion, or time.

**Herrmann Brain Dominance Instrument (HBDI):** A method of personality testing developed by W.E. (Ned) Herrmann that classifies individuals' preferred approach to thinking into four different modes based on brain function: left brain, cerebral; left brain, limbic; right brain, limbic; right brain, cerebral. (See also *Learning style*.)

**HTML (Hypertext Markup Language):** The programming language used to create documents for display on the web.

**Human performance improvement (HPI):** A term originally coined by ASTD that refers to a systematic, systemic, results-based approach to helping organizations achieve their goals through people. HPI is about the process used to identify a potential solution. Thus, any solution that happens to work that does not use a systematic, systemic approach to analysis is not performance based. (See also *Human performance technology [HPT]* and *Performance consulting*.)

**Human performance technology (HPT):** A term originally coined by Thomas Gilbert in the early 1960s that refers to the systematic, systemic, results-based approach to helping organizations achieve their goals through people. The word *human* indicates a focus on people (rather than financial or computer ability). *Performance* deals with results or accomplishments. *Technology* refers to a body of knowledge and practice. It is important to note that HPT is about the process used to identify a potential solution. Thus, any solution that happens to work that does not use a systematic, systemic approach to analysis is not performance based. (See also *Human performance improvement [HPI]* and *Performance consulting*.)

## I

**Independent variable:** The factor that influences the dependent variable. For example, age, seniority, gender, shift, level of education, and so on may all be factors (independent variables) that influence a person's performance (the dependent variable).

**Individualization (or individualized instruction):** The attempt to optimize instructional effectiveness by accommodating differences that exist among learners, such as ability, readiness, reading speed, and learning style. (See also *Learner-centric design*.)

**Information:** Raw data (facts, figures, ideas) that have been transformed through organization or reduction. When experience and understanding are added to information a person is said to have knowledge.

**Instruction:** Information that is taught. When a learning need requires instruction, training is provided. Instruction can be delivered via classroom, e-learning, and on-the-job training.

### **Instructional development:**

1. The process of producing learning activities.
2. Related to the development phase of instructional systems development (ISD).  
(See also *ADDIE* and *Instructional systems development [ISD]*.)

3. Loosely, a synonym for instructional design. Some practitioners prefer to use one of these terms, while other practitioners strictly use the other term (Reynolds, 1993).

**Instructional strategies:** The mechanisms through which instruction is presented (sometimes called presentation tactics or techniques).

**Instructional system:** An organized and arranged collection of instructional resources that, when combined, achieves the goal of addressing and providing appropriate training solutions.

**Instructional systems development (ISD):** A system approach to analyzing, designing, developing, implementing, and evaluating any instructional experience based on the belief that training is most effective when it gives learners a clear statement of what they must be able to do as a result of training and how their performance will be evaluated (sometimes also referred to as instructional systems design). (See also *ADDIE* and *Instructional development*.)

**Intellectual capital:** The sum total of all the knowledge assets that a company uses to accomplish its mission.

**Interactive spreadsheets:** An educational simulation genre in which learners typically try to affect three or four critical metrics (or variables, such as market share or profitability) indirectly by allocating finite resources along competing categories over a series of turns or intervals.

**Internal consultant:** A consultant who is paid as an employee by the client system (Reynolds, 1993).

**International Coach Federation (ICF):** A nonprofit, individual membership organization formed by professionals worldwide who practice business and personal coaching.

**Interval variables:** Factors that enable rank ordering of items measured and quantifying and comparing the sizes of differences between items.

**Intervention:** Another name for a solution or set of solutions, usually a combination of tools and techniques that clearly and directly relate to solving a performance gap or implementing an organizational change.

**Interview:** A meeting between an individual and one or more interviewers held for the purpose of collecting information, usually by verbal question and answer.

**Intrinsic feedback:** Feedback that demonstrates the consequences of the learner's response.

## J

**Job aid:** Any device, simple or complex, that an employee uses on the job to perform reliably. Job aids reduce the amount of information the performer must recall or retain to successfully carry out a task and are usually employed to increase the likelihood of high-fidelity performance. The classic example of a job aid is the pilot's checklist. Job aids are usually not intended to instruct (Reynolds, 1993).

**Job analysis:** Analysis to identify all duties and responsibilities and the respective tasks performed on a daily, weekly, monthly, or yearly basis that make up a single job function or role (Reynolds, 1993).

**Just-in-time training:** Training that provides learning when it is actually needed and used on the job (Reynolds, 1993).

## K

**Knowledge:** The cognitive abilities a performer needs to be able to complete a job that involve the development of intellectual skills.

**Knowledge management:** The explicit and systematic management of intellectual capital and organizational knowledge as well as the associated processes of creating, gathering, organizing, disseminating, leveraging, and using intellectual capital for the purposes of improvement of the organization and the individual.

**Knowledge mapping:** A process that connects information, educational expertise, and practical application of people in the organization for the purposes of sharing and access.

**Kolb's Learning Style Inventory:** An inventory, developed by David Kolb, of four learning styles or modes (concrete experience, reflective observation, abstract conceptualization, and active experimentation) and people's orientation to them. Kolb categorizes learners as convergers, divergers, assimilators, or accommodators. (See also *Learning style*.)

**KSA:** An abbreviation with two definitions:

- Knowledge (cognitive), skills (psychomotor), and attitudes (affective) are the three objective domains of learning defined by Benjamin Bloom's taxonomy in the 1950s.
- Knowledge, skills, and ability are also referred to as KSAs and are used by federal and private hiring agencies to determine the attributes or qualities an employee possesses for a particular job.

**L**

**Leadership:** The active process through which an individual seeks to identify courses of action and to guide and stimulate the actions of others toward goals desired by the leader. Leadership may be exhibited by any person at any level, with or without formal authority. It compares with management, which may or may not be accompanied by leadership and is applied from a position of formal authority (Reynolds, 1993).

**Learner-centric design:** An instructional design paradigm that focuses on optimal learning experiences (rather than content presentation).

**Learning:** The process of gaining knowledge, understanding, or skill by study, instruction, or experience.

**Learning content management system (LCMS):** A software system (or set of applications) used to manage the content (that is, computer files, image media, audio files, electronic documents, and web content) used in the development of online and instructor-led courses and to make it available to multiple authors.

**Learning management system (LMS):** A software system used for managing, administering, tracking, and reporting on instructor-led and online courses and other learning activities.

**Learning objective:** A statement that establishes a measurable behavioral outcome, used as an advanced organizer to indicate how the learner's acquisition of skills and knowledge is being measured.

**Learning objects:** Self-contained chunks of instructional material generally considered reusable in LCMSs. They typically include three components: a performance goal, the necessary learning content to reach that goal, and some form of evaluation to measure whether or not the goal was achieved.

**Learning style:** A description of a person's approach to learning that involves the way he or she behaves, feels, and processes information. (See also *Herrmann Brain Dominance Instrument [HBDI]*, *Kolb's Learning Style Inventory*, *Multiple Intelligence Theory*, and *VAK Model*.)

**Likert scale:** A type of instrument commonly constructed and used to measure opinion. It is characterized by requiring the participant to answer questions by selecting from among choices that range from strongly agree to strongly disagree (Reynolds, 1993).

## M

**Management development:** The various human resource development activities to assist managers in acquiring or enhancing the knowledge, skills, and values needed to be effective in their current and future managerial or supervisory leadership roles. Management development usually includes activities for employees down to first-level supervisors, for example, time management sessions. This term is sometimes preferred over management training for prestige reasons (Reynolds, 1993).

**Maslow's Hierarchy of Needs:** A model of human motivation developed by Abraham Maslow and introduced in 1954 in his book *Motivation and Personality*. Maslow contended that people have complex needs that they strive to fulfill and that change and evolve over time. He categorized these needs as physiological, safety or security, social or belongingness, esteem, and self-actualization, with the basic needs having to be satisfied before an individual can focus on growth.

**Measures of central tendency:** The three averages: mean (the average of a group of numbers), median (the middle value of a distribution where half the scores are above the median and half are below), and mode (the most frequently occurring value in a group of numbers).

**Mentoring:** The career development practice of using a more experienced individual tutor or group to share wisdom and expertise with a protégé over a specific period of time. There are three types of mentoring commonly used: one-on-one, group, and virtual. (See also *Coaching*.)

**Metrics:** Numerical attributes that are used as the basis for judging productivity, proficiency, performance, and worth.

**Mnemonic:** A device, formula, or rhyme used as an aid to enhance or develop memory.

**Motivation theory:** A theory based on the idea that by creating the right environment for people to work in, they will be motivated to grow and become connected to that environment. This theory is important to coaching.

**Multiple Intelligence Theory:** A theory, popularized by Howard Gardner in *Frames of Mind* (1985), that describes how intelligences reflect the ways people prefer to process information. Gardner claims that most people are comfortable in three to four of these intelligences and avoid the others. For example, for learners who are not comfortable working with others, doing group case studies may interfere with their ability to process new material.

**N**

**Neurolinguistic programming (NLP):** A style of communication and behavior change management that is based on observations and analyses of unconscious physical behaviors that identify patterns of feeling and thought.

**Nominal data:** Numbers or variables used to classify a system, such as digits in a telephone number or numbers on a football player's jersey.

**Normal distribution:** A particular way in which observations tend to pile up around a particular value rather than be spread evenly across a range of values. It refers statistically to a bell-shaped curve that gives the distribution of probability associated with the different values of a variation.

**Norm-referenced test:** A test that measures a person's knowledge or skill relative to scores of other learners in the same group. Norm-referenced tests are useful for sorting people into groups. Grading "on a curve" involves norm-referenced measurement because an individual's grade depends on the position on the curve (performance of other students). Generally, norm-referenced tests are not appropriate in workplace learning and performance and should not be used to evaluate either the learners or the instruction if there are explicitly stated objectives (Reynolds, 1993).

**O**

**Objectives:** An end toward which efforts are directed. Also, an interim or enabling state or condition that, when combined with other objectives, leads to a goal. The following are some examples of particular types of objectives:

- **Affective** objectives are learning objectives that specify the acquisition of particular attitudes, values, or feelings.
- **Behavioral** objectives specify the particular new behavior that an individual should be able to perform after training.
- **Learning** objectives are clear, measurable statements of performance (knowledge or skill) that is desired after the training has been conducted.

**Observation:** A training activity in which participants are directed to observe an event and asked to share their reflections, reactions, or insights. Observation is also a method for data collection.

**Online learning:** An all-encompassing term that refers to any learning done with a computer.

**On-the-job training (OJT):** Often called the most common training method. The worker or learner usually performs under the supervision of someone else already qualified to do the job. OJT provides observation with guided practice in a practical situation, while learners engage in productive work (Reynolds, 1993).

**Ontological coaching:** An approach to coaching that seeks to alter the way of being that the client experiences in relation to a situation. The expectation is that the new, altered way of being will make possible behaviors that result in learning, growth, and resolution of a given situation.

**Ordinal data:** Numbers or variables that allow ranking order of importance from highest to lowest.

**Ordinal variables:** Factors that make it possible to rank order items measured in terms of which has less and which has more of the quality represented by the variable.

**Organization development (OD):** The process of developing an organization to be more effective in achieving its business goals. OD uses planned projects to develop the systems, structures, and processes within the organization needed to improve effectiveness.

**Outlier:** A data point that's far removed in value from others in a data set.

## **P**

**Pedagogical elements:** Techniques that surround an experience, ensuring that a participant's time is spent productively. In simulations, pedagogical elements can include in-game tips or directions, graphs, highlights, forced moments of reflection, bread crumbs, coach or facilitator, background material, and after action reviews. Pedagogical elements in real life range from speedometers and caller identification to the advice of mentors.

**Pedagogy:** The function or work of learning where the focus is on what the instructor does as opposed to what the participants do; usually refers to teaching children.

**Performance:** A combination of the accomplishments produced by people on the job and the behaviors used to achieve these accomplishments.

**Performance analysis:** A form of analysis that measures the gap between an individual's, group of individuals', or an organization's desired and actual performance.

**Performance consultant:** A term popularized by Dana and Jim Robinson. The Robinsons support the concept of both partnering with clients and also adopting a consultative approach in addressing performance problems.

**Performance consulting:** A process in which clients and WLP professionals partner to achieve the strategic outcome of enhanced workplace performance in support of business needs.

**Podcast:** A method of publishing audio files to the Internet that allows users to subscribe and receive new files automatically via an RSS feed. The term derives from Apple's *iPod* and the word *broadcasting*.

**Practiceware:** The educational simulation genre that encourages participants to repeat actions in high-fidelity, real-time, often 3D situations until the skill becomes natural in the real world.

**Principle:** An *if...then* relationship that is typically expressed as a prediction or an explanation of why something has occurred.

**Procedural knowledge:** The sequence of decisions and actions a person performs to achieve a goal. Procedures vary from well-structured (algorithmic) to ill-structured. People perform procedures, or solve problems by doing procedures that they recall or formulate.

**Process consulting:** A consulting approach that relies on the intuitive awareness of the consultant who attends to and observes the emotional, nonverbal, perceptual, and spatial aspects of human behavior. Process consultants help the client understand what is happening, identify solutions, and transfer skills to the client to manage the ongoing process. Their focus is on the energy of the client system and a heightened awareness of the dynamics in the group or organization.

**Program evaluation:** An assessment of the effect of a training program on learning.

**Project management:** The processes involved in planning, organizing, directing, and controlling resources for a finite period of time to complete specific goals and objectives.

## Q

**Qualitative analysis:** An examination of participants' opinions, behaviors, and attributes that is often descriptive.

**Qualitative data:** Information that can be difficult to measure or express in numbers.

## R

**Random assignment:** The process of arbitrarily assigning a sample to different groups or treatments in the study.

**Random sampling:** A selection process for a sample in which every person in the population has an equal chance of being chosen. Choosing every tenth person from an alphabetical list of names, for example, creates a random sample.

**Random selection:** The process of drawing the sample of people for a study from a population.

**Rapid instructional design (RID):** A collection of strategies for quickly producing instructional packages to enable a group of learners to achieve a set of specific instructional objectives.

**Reliability:** The ability to achieve consistent results from a measurement over time.

**Return-on-investment (ROI):** A ratio of the benefit or profit received from a given investment to the cost of the investment itself. It constitutes accountability for training programs.

## S

**Script:** A program or set of instructions that are not carried out by the computer processor but by another program. Code is interpreted at run time rather than being stored in executable format.

**Self-directed learning (SDL):** Individualized, or self-paced, learning that generally refers to programs that use a variety of delivery media, ranging from print products to web-based systems. It can also refer to less formal types of learning, such as team learning, knowledge management systems, and self-development programs.

**Sharable Content Object Reference Model (SCORM):** A model that defines a web-based learning “Content Aggregation Model” and “Run-Time Environment” for learning objects. SCORM is a collection of specifications adapted from multiple sources to provide a comprehensive suite of e-learning capabilities that enable interoperability, accessibility, and reusability of web-based learning content.

**Simulation:** A broad genre of experiences, including games for entertainment and immersive learning simulations for formal learning programs. Simulations use simulation elements to model and present situations, including actions, reflected in the interface; how the actions then affect relevant systems; and how those systems produce feedback and results. The simulation elements are mixed with game elements to make it engaging and pedagogical elements (including coaching) to make it effective and organized into tasks and levels to create incrementally challenging practice environments, leveraging linear content.

**Six Sigma:** A process-improvement strategy and measure of quality that strives for near perfection. Six Sigma is a disciplined, data-driven methodology for eliminating defects (driving toward six standard deviations between the mean and the nearest specification limit) in a process. The fundamental objective of the Six Sigma methodology is the implementation of a measurement-based strategy that focuses on process improvement and variation reduction through the application to projects.

**Skills:** The physical movement, coordination, and use of motor skills needed to accomplish a task.

**Soft data:** Qualitative measures that are more intangible, anecdotal, personal, and subjective, such as opinions, attitudes, assumptions, feelings, values, and desires. Qualitative data can't be objectified, and that characteristic makes this type of data valuable.

**Standard deviation:** A commonly used measure or indicator of the amount of variability of scores from the mean. The standard deviation is often used in formulas for advanced or inferential statistics.

**Statistic:** A number that summarizes data collected from a sample.

**Strategic planning:** The formulation, development, implementation, and evaluation of how an organization will reach its objectives.

**Strengths, weaknesses, opportunities, and threats (SWOT) analysis:** An analysis tool used in strategic planning to establish environmental factors within and outside an organization.

**Subjective-centered instruction:** A pedagogy-based instructional approach. Subject-centered instruction focuses on what will be taught as opposed to learner-related characteristics.

**Subject matter expert (SME):** A person with extensive knowledge and skills in a particular subject area.

**Survey:** A written, electronic, or verbal instrument used to collect information.

**Synchronous e-learning:** Learning that takes place over the Internet in which the trainer and the learners interact via the web in real time. Another name for this type of learning is webinar. Typically it involves the trainer presenting through either a teleconference phone call, or web-based audio or voice over Internet protocol (VOIP) supported by a slideshow presentation that the learners can view at the same time. Learners can also ask questions or provide comments through the phone line, or through a chat feature.

**Synchronous learning:** Instruction that is led by a facilitator in real time. Examples of synchronous interactions include traditional trainer-led classrooms, conference calls, instant messages, video conferences, whiteboard sessions, and synchronous online classrooms or classroom software.

**Systems:** A combination of parts forming a complex that when put in action produces results.

**Systems thinking:** A conceptual framework that encompasses considering the whole, making patterns (and ways to change them) more understandable.

## T

**Tacit knowledge:** A type of knowledge that refers to personal knowledge in a person's head; knowing how to do something based on experience.

**Thinking styles:** A concept that relates to the patterns and preferences that emerge in the way people process information.

**Total quality management (TQM):** A continuous improvement methodology for every process, supported by management to improve customer satisfaction. TQM includes every employee using tools, data, and teamwork. W. Edwards Deming brought this concept to Japan and the United States, asserting that every function in the organization is responsible for quality (Reynolds, 1993).

**Trainer:** A person who helps individuals improve performance by teaching, instructing, or facilitating learning.

**Training aids or materials:** Items such as assessment instruments, videos or CD-ROMs, transparencies, slides, computer-generated visual aids, audiotapes, games, and evaluation tools that are used to assist in the instruction and learning process.

**Training needs assessment:** The process of collecting and synthesizing data to identify how training can help an organization reach its goals.

**Transfer of learning:** The process of learning delivery, retention, and implementation back on the job.

## V

**VAK Model:** A model that describes the way that individuals learn and retain information. Some people learn primarily through one learning style, others through a combination of the three: visual (learners need pictures, diagrams, and other visuals), audio (learners need to hear information), and kinesthetic (learners need hands-on learning).

**Validity:** A measurement concept that indicates that an instrument measures what it is intended to measure.

**Variance:** A measure of how spread out a distribution is. It's calculated as the average squared deviation of each number from the mean of a data set.

**Virtual lab:** The educational simulation genre in which participants engage a virtual product, structured by tasks and levels, to learn about (or to demonstrate competency in) using some real-world item.

## W

**Web-based training (WBT):** Delivery of educational content via a web browser over the public Internet, a private intranet, or an extranet. WBT often provides links to other learning resources such as references, email, bulletin boards, and discussion groups. WBT also may include a facilitator who can provide course guidelines, manage discussion boards, deliver lectures, and so forth. When used with a facilitator, WBT offers some advantages of instructor-led training, while retaining the advantages of computer-based training (CBT).

**Whole Brain Thinking:** The awareness of one's own thinking style and the thinking styles of others combined with the ability to act outside of one's preferred thinking style. Developed by Ned Herrmann using his own brain research as well as other studies, the model presents four patterns that emerge in terms of how the brain perceives and processes information. The Whole Brain Model emerged as a validated description of the four different preference modes, dividing the brain into four separate quadrants. Each quadrant is different and of equal importance. These are the specializations of the four quadrants:

- Quadrant A specializes in logical, analytical, quantitative, fact-based thinking.
- Quadrant B focuses on details and specializes in planning, organizing, and sequencing information.
- Quadrant C places a priority on feelings and the interpersonal, emotional, and kinesthetic aspects of a situation.
- Quadrant D synthesizes and integrates information and is more intuitive and holistic in its thinking.

**WIIFM (What's in it for me?):** A common statement used by trainers to ensure that learners need to know how the content will benefit them.

**Wiki:** A collaborative website with content that can be modified by users. A wiki allows anyone using a web browser to edit, delete, or modify information on the site, including the work of other authors. *Wiki wiki* means "quickly" in the Hawaiian language.

**Workplace learning and performance (WLP):** The professions of training, performance improvement, learning, development, and workplace education. It often is colloquially referred to as training or training and development.

**Workforce planning:** The process and activities that ensure that an organization can meet its goals and objectives within a changing business environment by ensuring the right numbers of the right kinds of people are available at the right times and in the right place.

**WYSIWYG (What you see is what you get):** An acronym that is pronounced *wizzy-wig*. WYSIWYG applications don't always display code; instead they provide a working area where text and graphics are placed on the screen.

## **X**

**XML (Extensible Markup Language):** The webpage coding language that allows site designers to program their own markup commands, which can then be used as if they were standard HTML commands.

## **Reference**

Reynolds, Angus. 1993. *The Trainer's Dictionary*. Amherst, MA: HRD Press. Used with permission.  
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