

Strategies for Organization Members Mastering Learning Concepts and Processes for Enhancement of Skills and Competencies

David E. Bartz, EdD

Professor Emeritus

Department of Educational Leadership
Eastern Illinois University
Charleston, IL USA

William Allan Kritsonis, PhD

Distinguished Alumnus

College of Education and Professional Studies
Central Washington University
Ellensburg, Washington

Abstract

Change, often technologically driven, constantly alters the skills and competencies organization members need to perform their present job effectively, acquire attributes for career growth, and maintain competitiveness for employment. Organization members must constantly seek learning opportunities to maintain their employability and earning power. Understanding and being able to apply key learning concepts and processes will significantly aid organization members in learning more efficiently (time spent) and effectively (retention of knowledge). Retrieval practice, elaboration, proper use of prior knowledge, extracting, massed practice, distributed practice, interleaving, and metacognition are concepts and processes that aid organization members in maximizing their learning.

Keywords: mastering learning concepts and processes, organization members

Context

The astute and progressive organization member needs to continually learn new skills and competencies to perform effectively now and be competitive in the future. As Greco (2016) observes: “Everyone needs to be learning and developing constantly to remain competitive” (p. 72).

Regarding the future of work, Deloitte Development (2018) advocates: “It’s no longer humans vs. machines. Leading companies are rapidly preparing their workforces to work with AI [Artificial Intelligence], robots, and other machines” (p. 4). The rapid technology-driven change in organizations necessitates the acquisition and mastery of new knowledge for organization members to avoid falling behind, being obsolete, and in the worst-case scenario unemployed and unemployable (Krisher & Boak, 2018). In this same vein, Shank (2017) indicates that:

It is easy to see that escalating technical, socioeconomic, geopolitical, and demographic changes are altering how we work and the nature of jobs. Many call these changes the *Fourth Industrial Revolution*. Change at such a rapid rate forces industries, companies, and workers to either adapt [quickly] or fail. (p. 43)

Being able to utilize learning concepts and processes efficiently (time spent) and effectively (retention of knowledge) are critical to organization members' careers for meeting the skills and competency needs of their present position and growth for career sustainability and development. With focused attention, organization members can become better at learning because "learning is an acquired skill" (Brown, Roediger, & McDaniel, 2014, p. 2). This article presents strategies that organization members can use to master learning concepts and processes, stay competitive in their current position, grow professionally for the future, and avoid becoming obsolete.

Responsibilities of the Organization Member for Learning

"The responsibility for learning rests with every individual" (Brown et al., 2014, p. xi). The individual characteristics which organization members bring to the learning environment significantly influence how well they learn. Organization members need to regularly assess themselves concerning self-efficacy, goal orientation, and motivation to learn to maximize their learning (Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012).

Self-efficacy means that organization members have the confidence and resilience to be successful at learning. This encompasses being conscientious, having a positive attitude, and possessing a belief that, even when learning is extremely challenging, they will master the knowledge and convert it to skills and competencies.

Goal orientation "is the mental framework that one [an organization member] uses to interpret and then shape how to behave in learning-oriented environments" (Salas et al., 2012, p. 84). Specifically, this means organization members:

- (1) Seek to acquire new skills and master any novel situations.
- (2) Exert sufficient effort to learn and are adaptive at using a variety of strategies to be successful.
- (3) Fixate on the learning task with a laser-like focus.
- (4) Have an openness to explore the unknown and be willing to take risks and learn from their mistakes.
- (5) Achieve the desired learning outcomes (Salas, et al., 2012, p. 84).

Motivation to learn is indicative of organization members having a focus directed on what to learn, sufficient effort to complete the learning activities, a sincere interest in learning the content, and the persistence and perseverance to successfully complete the learning activities (Salas et al., 2012, p. 84). Motivation encompasses the popular concept of grit—unwavering passion, perseverance, consistency, interest, and effort to achieve a goal (Duckworth, 2016; Crede, 2018).

Sources for Learning

There are three major sources for organization members to utilize to enhance learning: (1) organization sponsored activities; (2) non-organization formal sources (e.g., professional associations, universities, and commercially sold products); and (3) informal learning initiated by organization members at any times in their lives. Within these three sources, the delivery system for learning can be in many forms (e.g., traditional face-to-face, total E-learning, a blending of the preceding two, readings, social media, and interactions with colleagues and associates). Greco (2016) notes the crucial role that networks can play in an organization member's learning, observing that "professional networks are leveraged for collaborative learning" (p. 72).

The amount of control the organization member has over the learning process varies depending on how the source is used and how the instructional delivery system is designed for that source. Hence, the application of the learning concepts and processes presented in this article's forthcoming section – Basics of Learning – within the control of the organization member will also vary. The point is that whenever organization members have the opportunity to influence or control the learning environment to utilize the learning concepts and processes presented in this article, they are encouraged to do so to maximize the efficiency (time) and effectiveness (retention of knowledge) of their learning.

How the Human Brain Functions in the Context of Learning

Brain plasticity is a relatively new discovery in brain science that has amazing implications on the way we think and on the way our brain works. Essentially, brain plasticity refers to the fact that the brain appears to be 'plastic' in that it is adaptable and can change shape in order to deal with a new scenario. Our brain in this sense is much like a muscle. (Jacoby, 2018, p. 1)

Misinformation abounds regarding how the human brain operates in the context of learning. For example, "We have been raised to think that the brain is hardwired and our intellectual potential is more or less set from birth. We now know otherwise" (Brown et al., 2014, p. 165). Tokuhamma-Espinosa (as cited in Heller, 2018/2019) translates findings from recent state-of-the-art, best evidence research on neuroscience regarding how the brain functions for learning and summarizes the research into the six principles listed here:

Principle 1: Human brains are as unique as human faces. While the basic structure of most human brains is the same (similar parts in similar regions), no two brains are identical. The genetic makeup unique to each person combines with life experiences (and free will) to shape neural pathways.

Principle 2: Each individual's brain is differently prepared to learn different tasks. The context of the learning shapes learning capacities, prior learning experiences, personal choice, the individual's biology and genetic makeup, prenatal and perinatal [at time of birth] events, and environmental exposures.

Principle 3: Prior experiences influence new learning. The efficiency of the brain economizes effort and energy by ensuring that external stimuli are first decoded and compared,

both passively and actively, with existing memories.

Principle 4: The brain constantly changes with experience. The brain is a complex, dynamic, and integrated system that is *constantly changed by individual experiences*.

Principle 5: The brain is plastic. Neuroplasticity (*the brain's ability to change*—for better and worse) exists throughout the lifespan, though there are notable developmental differences by age.

Principle 6: There is no new learning without some form of memory and some form of attention. Most learning requires working and well-functioning short- and long-term memory systems, as well as *conscious attention*. (p. 28)

An essential point for organization members' learning is that, with consistent and engaged use, their brains can “get better.” The more organization members actively use their brains to learn new knowledge, the more likely it is for their brains to grow and function more effectively. In summary, “the power of brain plasticity can help adult minds grow” (What is brain plasticity? (BrainHQ, n.d., p. 1).

Basics of Learning

Learning requires the input of new information—content—to acquire knowledge that can be internalized by organizational members for understanding and being converted into an application on their present jobs to develop attributes for career growth. Acquiring knowledge through learning new content is of minimal use unless the organization member can convert it into demonstrable skills and competencies and know when, and how, to utilize these new skills and competencies.

Once new information is acquired in the form of knowledge, learning requires memory and *retrieval practice*—recall from memory—to keep it usable. Tokuhama-Espinosa (as cited in Heller, 2018/2019) notes that: “It is easier to retrieve memories when facts and skills have been embedded in individually relevant and meaningful contexts” (p. 29). Retrieval practice gives an organization member feedback—knowledge of results—regarding the accuracy of understanding a piece of knowledge and aids in solidifying and expanding knowledge (Tokuhama-Espinosa as cited in Heller, 2018/2019). The effectiveness of retrieval practice, though, is impacted by “the interactive effect of to-be-learned materials and individual differences in the learner” (Minear, Coane, Boland, Cooney, & Albat, 2018, p. 1,474). Retrieval practice by organization members *interrupts forgetting* the new information and ingrains it in memory. Making mistakes when learning is not necessarily bad if the erroneous information is accurately corrected. In fact, “Making mistakes and correcting them builds the bridges to advanced learning” (Brown et al., 2014, p. 7).

Memory of new information is enhanced through *elaboration*, which is the process of organization members giving meaning to the new information by expressing the new knowledge in their own words *and* connecting it with their related *prior knowledge* (Brown et al., 2014). This is often termed *contextualization*. Specifically, “The more you can explain about the way your new learning relates to your prior knowledge, the stronger your grasp of the new learning will be and the more connections you create that will help you remember it later” (Brown et al., 2014, p. 5). This statement assumes that organization members' prior knowledge is correct, which may not always be the case.

By interacting with others, organization members can “check for understanding” to

ascertain if they have the new learning accurately assimilated and are not being misled by inaccurate prior knowledge. Organization members also bring many experiences to a learning session that they often use as reference points for processing new information. As with prior knowledge, prior experience can be a double-edged sword—a plus or a minus for organization members correctly assimilating new information (Knowles as cited in National Highway Institute, n.d.)

Organization members are *extracting* key concepts, ideas, and underlying principles from new information; organizing this information *in a mental model* that is logical and makes sense to them, and connecting this with prior knowledge is an excellent learning strategy. A learning approach similar to the “mental model” is the constructivist learning strategy which advocates organization members *construct* or interpret newly learned knowledge *in logic that is understandable to them* and in their language or terms. Specifically, organization members need to process and construct the newly learned information in the way it makes sense to them—within their context—and be able to accurately explain the newly learned knowledge to others. Ultimately, the organization member must convert the knowledge learned to usable skills and competencies. An organization member’s mastery of a new skill or competency is usually a gradual increase of knowledge, conceptual understanding, and judgment that—with time and practice—is transitioned into the new skill or competency (Brown et al., 2014).

Learning is not always initially recall-based, *per se*. *Generative learning*—with similarities to extracting and constructivism—entails an organization member attempting “to solve a problem without the benefit of having been taught how” (Brown et al., 2014, p. 94). The point of generative learning is that the organization member “generates” the answer rather than recalling it. Generative learning is also called discovery learning because the organization member assembles pieces of information to determine their relationships and causation, thus *discovering the logical answer*. Recall does come into play, though, for future use and is aided by the organizational member’s experience in generating and discovering the steps to solve a problem.

Massed practice is attempting to learn a concept or skill with the “practice-practice-practice” in one long session (e.g., multiple hours) approach because it is assumed that the concept or skill will be “burned into an organization member’s memory” (Brown et al., 2014, p. 47). Using *spaced practice/repetition* (also called *distributed practice*) through several shorter sessions is more effective for retaining information over time than the massed practice approach. “Gains achieved during massed practice are transitory and melt away quickly” (Brown et al., 2014, p. 10).

During continuous massed practice a type of fatigue builds up that interferes with performance. However, this fatigue dissipates during rest periods, so overall performance is better if frequent rest periods are allowed by using distributive practice (Mazur, 2013 p. 279). The bottom line is: “Practice is far more effective when it’s broken into separate [shorter] periods of training that are spaced out” (Brown et al., 2014, p. 47).

Interleaving means studying several different—but related—skills in one learning session (Brown et al., 2014). This is in comparison to the traditional learning approach of studying only the knowledge for one concrete skill in a learning session. While this may seem counterintuitive to some organization members, it works. Interleaving “boosts learning by encouraging connections between and discrimination among closely related topics” (Agarwal & Roediger, 2018/2019, p. 9). While interleaving may initially slow down organization members’ learning a concept, it will eventually result in great *retention over time*.

Organization members may be partial to a particular *learning style* (e.g., visual, auditory, or kinesthetic) and perceive that this is the best way—and in some instances the only way—they can learn. As Brown et al. (2014) observe: “The idea that individuals have distinct learning styles has been around long enough to become part of the folklore of educational practice and an integral part of how many people perceive themselves” (p. 131). Tokuhama-Espinosa (as cited in Heller, 2018/2019) notes that, regarding the learning styles philosophy, it “has been debunked many times” by research (p. 27).

Organization members can effectively learn through all learning styles. Multiple forms of intelligence, through various learning styles, facilitate effective learning. It is best for organization members to “go wide” and draw on all their aptitude and not be limited by using only a preferred learning style (Brown et al., 2014, p. 4).

Metacognition is a learning strategy that aids organization members to become more self-sufficient learners by helping them understand and regulate their learning (Ketter, 2017; Shank, 2017). Metacognition stresses organization members becoming intentionally aware of their thoughts and how they think in the context of learning new information. According to Dunning and Kruger, metacognition is sometimes described as *thinking about learning*, judging one’s learning performance accurately, and avoiding illusions of knowing something one really has not successfully learned (as cited in Brown et al., 2014, p. 121).

Metacognition advocates organization members taking the initiative to be “active participants in their learning experiences” (Bell, Tannenbaum, Ford, Noe, & Kraiger, 2017, p. 23). It emphasizes organization members taking the initiative to become more self-directed learners by specifically assessing what they need to learn (based on previous experience), how to best learn the new information, and periodically reflecting on their progress and making needed adjustments. Organization members need to think about—and analyze—how they most efficiently and effectively learn new content by “using lessons learned in previous experiences to make future learning experiences work better” (Shank, 2017, p. 44). Metacognition stresses organization members being able to “regulate” their knowledge about how they learn to *maximize learning* (Zepeda, Hlutkowsky, Pertika, & Nokes-Malach, 2018, p. 1).

Shank (2017) indicates that metacognition is organization members *owning their learning*. This implies organization members are taking the initiative to seek out new knowledge and skills in relationship to: (1) staying up-to-date on the skills and competencies needed to perform their current job effectively and (2) anticipating needed future attributes to be competitive in their professional field and enhance career development. Najmael and Hindjad (as cited in Das, 2016) observe that organization members well versed in practicing metacognition often develop enhanced cognitive ability that results in *cognitive adaptability astuteness*—which is being more effective at dealing with change in the work environment.

Closing Thoughts

In the present economic and political environment, *change is a constant*. Insightful organization members understand the impacts of change and the need to constantly seek learning opportunities to broaden their knowledge, skills, and competencies to stay up-to-date in their profession and maintain attractive employability. Organization members can maximize their learning for career sustainability and professional growth through the effective application of the following learning concepts and processes: retrieval practice, elaboration, proper use of prior

knowledge, extracting, massed practice, distributed practice, interleaving, and metacognition.

References

- Agarwal, P. K., & Roediger, H. L., III (2018/2019, December/January). How cognitive psychology informs classroom practice. *Phi Delta Kappan*, 100(4), 8-12.
- Bell, B. S., Tannenbaum, S. I., Ford, J. K., Noe, R. A., & Kraiger, K. (2017). *100 years of training and development research: What we know and where we go from here*. Retrieved from <https://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=2306&context=articles>
- BrainHQ. (n.d.) *What is brain plasticity?* Retrieved from <https://www.brainhq.com/brainresources/brain-plasticity/what-is-brain-plasticity>
- Brown, P. C., Roediger, H. L., III, & McDaniel, M. A. (2014). *Make it stick. The science of successful learning*. Cambridge, MA: The Belnap Press of Harvard University Press.
- Crede, M. (2018). What shall we do about grit: A critical review of what we know and what we don't know. *Educational Researcher*, 47(9), 606-611.
- Das, T. K. (Ed.). (2016). *Decision-making in behavioral strategy* (pp. 49-82). Charlotte, NC: Information Age.
- Deloitte Development. (2018, December 16). The future isn't on the distance horizon. It's here. *New York Times*, Technology Section, pp. 4-5.
- Duckworth, A. (2016). *Grit: The power of passion and perseverance*. New York: NY: Simon and Schuster.
- Greco, A. (2016). Guiding the hand of self-directed learning. *Talent Development*, 70(9), 72-73.
- Heller, R. (2018/2019). *What we know (and what we think we know) about the learning brain*. *Phi Delta Kappan*, 100(4), 24-30.
- Jacoby, C. (2018). *Brain plasticity: What is it and what does it mean?* Retrieved from <https://www.healthguidance.org/entry/14181/1/brain-plasticity-what-is-it-and-what-does-it-mean.html>
- Ketter, P. (2017). Brain science and talent development. *Talent Development Journal*, 71(4), 6.
- Krisher, T., & Boak, J. (2018, December 5). A stern white collar warning. *Chicago Tribune*, Section 2, p. 3.
- Mazur, J. E. (2013). *Learning and behavior*. Boston, MA: Pearson.
- Minear, M., Coane, J. H., Bolard, S. C., Cooney, L. H., & Albat, M. (2018). The benefits of retrieval practice depends on item difficulty and intelligence. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 44(9), 1474-1486.
- National Highway Institute. (n.d.). *Principles of adult learning and instructional design* (pp. 3-4). Retrieved from <https://www.nhi.fhwa.dot.gov/downloads/freebies/172/pr%20pre-course%20reading%20assignment.pdf>
- Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interests*, 13(2), 74-101.
- Shank, P. (2017). Self-sufficient learners make successful workers. *Talent Development Journal*, 71(4), 43-46.

Zepeda, C. D., Hlutkowsky, C. O., Partika, A. C., & Nokes-Malach, T. J. (2018, October 29). Teachers' supports of metacognition through classroom talk and its relation to growth in conceptual learning. *Journal of Educational Psychology* (Advance Online Publication). Retrieved from <http://dx.doi.org/10.1037/edu0000300>