Edward Lee Thorndike is best known as America's quintessential scientific educational theorist. His theories and empirical and quantitative research conducted in understanding animal intelligence would ultimately become foundational to the development of human educational psychology, philosophy, and policy. Of special significance in terms of reforming the way in which educators thought about human behavior was Thorndike's work on operant conditioning. His research interests varied from adult learning to intelligence tests for the U.S. military.

Born August 31, 1874, in Williamsburg, Massachusetts, Thorndike received his master's degree from Harvard University in 1897 and his doctorate of philosophy from Columbia University in 1898. Thorndike's 40-year career in the professorship was spent at Columbia University Teachers College. During that time his comprehensive contributions in understanding, measuring, and quantifying human learning and intellectual potentials helped solidify Teachers College as one of the most prestigious training institutions for educational leaders in the United States. It is believed that Thorndike did not fully receive the recognition and appreciation worthy of a scholar of his magnitude, despite his indisputable intellectual contributions. His detractors, primarily Progressives, viewed his scientific educational approaches (including Law and Exercise), along with other concepts in learning, as being resoundingly positivist and deterministic. Thorndike argued that heredity (race) had much to do with differentiations and limitations in learning, which further aroused harsh criticism.

Thorndike's theory of connectionism or belonging was at the core of his assertions about how individuals learn through forming connections and associations among situations, conditions, or responses in either short- or long-term sequences involving changes in connections either pleasant or unpleasant. His research revealed that individuals possess a broad range of connected intellectual capacities, which led him to conclude that testing measured only a narrow range of human intelligence. Darwinism, experimentalism, and the work of William James were substantive influences on his scholarship. Thorndike's research of, and knowledge in, the field of scientific educational psychology was encyclopedic. Therefore, only three of his notable theories are highlighted and especially because they have impacted educational activities and reform within schools throughout the United States. They include the halo effect, law of effect, and principles of learning.

**The Halo Effect**

The *halo effect* is much like its name suggests, in that when individuals tend to view and judge others predominately by one specific desirable attribute, or characteristic, they render those persons as virtually consisting of that perceived favorable attribute—*angelic*. For example, one person may view another as being primarily good, and therefore judge that individual as being inherently good in most, if not all, aspects of his or her nature. These judgments are subjective and predicated on cognitive bias due to denial or lack of recognition of less desirable attributes. Thorndike had concerns as to how the halo effect influenced psychological ratings and experiments. This theory has been appropriated recently by human resources and technology industries.

**Law of Effect**

The precursor to the (S-R) theory or stimuli/response began with Thorndike's experimentation with
the puzzle box and a cat, wherein several solutions were given for the same situation. The outcome was that certain stimulus/teaching, enforcements, consequences, and connections within an environment produced satisfactory responses while other stimuli/teaching and changes in environment demonstrated student dissatisfaction with the exercise. Information gained from the puzzle box study was extrapolated and applied to understanding human learning behavior. For example, in learning, individuals will wish to repeat and adapt to the learning exercise due to increased learning, satisfaction, and habit within a given environment. Connections in human behavior can be changed or modified; consequently, all effective learning ranges along a continuum of connectivity or connection-forming with different or situation-specific responses. Without connections, learning appears to be only a dissatisfactory series of repetitious actions not conducive to substantive long-term learning. Thorndike’s law of exercise figures prominently in this theory: Specifically, rigorous repetition of identical elements in an environment, exercise, and duration of connection increase remembrance and learning.

**Principles of Learning**

In an effort to understand human principles of learning or laws, Thorndike distinguished several key elements that predisposed human learning; these were later added to by educational psychologists. Readiness is just that, a state of readiness on multiple levels to engage in learning. Exercise is necessary to grasp simple to complex learning tasks. Effect, as stated above under law of effect, occurs for most students within environments they find satisfying versus those that are deemed unsatisfactory. With regard to primacy, ideally, early or primary learning should be positive, effective, and the basis for all future learning. As for recency, human memory is indeed fallible; consequently, those things learned more recently can be recalled more readily and effectively than earlier learning. The importance of intensity is that, comparable to experiential learning, students tend to learn when involved firsthand in the learning experience, and particularly when the learning is accompanied by vibrant and intense teaching pedagogy and praxis.

At the close of the 20th century, educators at all levels from K-12 and in higher education began advocating for more interactive, transactional, realistic, and meaningful student learning. Of the three theories addressed here, along with connectionism, it appears that Thorndike worked from a position of relationship among these theories rather than having each stand on its own. While Thorndike’s models in educational psychology may appear to be outdated, especially to those with progressivist views, his perspectives on the need for student satisfaction in the learning process remain constant, highly contemporary, and clearly a part of the dialogue evidenced by more conservative educational policymakers who continue to argue for reform in schools throughout the United States.

**See also**

Behaviorism, Direct Instruction, Finn, Chester E., Jr., Neoconservatives, Skinner, B. F.

**Further Readings**


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