

# Chapter I

## Beginnings in Instructional Design and Culture

### **PIONEERS IN LEARNING, LEARNING THEORY, & PSYCHOLOGY**

If the history of the world is properly searched, the birth of innovation in learning theory as a practice and psychology as a science can be found in the literature of scholars across nations. In Germany, Wilhelm A. Lay (1903) studied the relationship between psychology (i.e., memory, perception, muscle response) and the practice of teaching subject matter (i.e., reading, writing, and arithmetic). Lay believed that educational topics could benefit from an experimental approach that explored “not only the psychological but also the biological, anthropological, hygienic, economic, logical, ethical, aesthetic, and religious experiences of the pupil and his community by means of observation, statistics and the experiment (Lay, 1936, p. 139).” In Geneva, Edouard Claparède (1905) argued that the type of teaching should be dependent on the knowledge the child brings with them. Claparède believed that the learner needed to know *how* to learn in order to learn. Ernst Meumann (1907), in Germany, continued with this line of inquiry into experimental psychology and experimental pedagogy examining the application of psychology methods to pedagogical problems. Given the increased demands on children to learn more information, Meumann sought to develop psychologically based methods to improve

teaching and learning. Meumann (1913) wrote in the introduction of the book *The Psychology of Learning*:

*In the traditional pedagogy we read a great deal about methods of teaching; but in most cases, the pedagogical text-books can tell us nothing about methods of learning. And yet we find ourselves confronted by the very serious question as to whether the efficiency of school-room management may not be increased by systematically improving the pupil's procedure in the act of learning in such a fashion that his learning may be perfected in its technical aspects and accomplished more economically (p. xiv).*

In the United States, early examples of the scientific approach to the child study movement can be found in the works of psychologists G. Stanley Hall (e.g., *The Contents of Children's Minds on Entering School* - 1893) and James M. Cattell (e.g., *Mental Tests and Measurements* -1890). Furthering the research in child psychology, John Dewey and Edward Lee Thorndike explored the psychology of schooling and the child. Dewey (1897) theorized that, to educate an individual, one must know about their “psychological structure and activities” and their “social conditions” (p. 4). This knowledge aided in determining where the child came from and where they were headed. Specifically, Dewey sought to understand how socialization influenced learning and how it could aid in educating the individual. Edward Lee Thorndike (1903, 1906) contributed several textbooks on the psychology of education, teaching, and learning. In the textbook *Educational Psychology*, Thorndike (1903) examined the influences of mental development, environment, and genetics. In formulating a theory of education, Thorndike (1903) hypothesized the following:

*To know the original natures of the beings to be educated and to know the influence of the forces of nature, human lives and all the paraphernalia of civilization upon these original natures is to know how to control their education in the interest of the aim we have chosen (p. 163).*

Thorndike proposed that, through knowing humankind, it is possible to control the quantity and quality of our knowledge. This possibility, like the theorizing of Thorndike's predecessors, had great implications for the design of instruction and, further, in educating the human race.

The contributions of Marxist psychologists should be added to the history of instructional design. This work contributed to the research conducted during the 1920-1940s on child study, teaching, and learning. In the United Soviet Socialist Republics (USSR), Lev Vygotsky's research with the Institute of Psychology at Moscow University produced a manual on the practical applications of teaching.

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