# Chaos in the Classroom

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## *A New Theory of Teaching and Learning*

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Dorothy Leflore

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# Contents

# Introduction

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This book, *Chaos in the Classroom*, considers what most researchers may not, that there is a definitive relationship between chaos theory, critical thinking, and brain research. While others have attempted to examine one of these ideas, Davis, Smith, and Leflore advocate that a definitive relationship exists between these three concepts and that this relationship has a positive impact upon students in classrooms. There are numerous theories that consider how students learn, but chaos theory is one of those that many educators have not sought to understand, let alone implement in educational settings.

Many educators still rely upon a linearly reductive conception of cognition that posits knowledge to be independent and external to the student's reality. Such a worldview mandates that teachers insert knowledge into the minds of the students in the most effective and efficient method possible, irrespective of context. Therefore, conceptualization is inhibited and students are assessed on their ability to memorize, but not utilize, knowledge.

The authors have chosen to advance a theory not readily employed in the classroom that, when implemented, connects with the nonlinear structure of our brain. If one considers Gardner's theory of multiple intelligences, it is quite clear that educators have focused too long on the notion that one size fits all.

The approach Davis, Smith, and Leflore take in linking brain research to learning is not novel; however, brain research has not been readily applied in instructional settings or in the development of materials for teaching higher-order thinking skills. Perhaps higher-order thinking skills are not as difficult to teach when they are taught in an instructional setting that allows students, not their teachers, to em-

ploy specific learning modalities. The authors are able to demonstrate that the highly organized linear approach to learning might be just the opposite of what most students actually need. Students learn according to their experiences, and since we live in a chaotic (not linear) environment, structured chaos can be successfully employed in the classroom.

The new theory of cognition advocated by Davis, Smith, and Leflore correlates to the "Mozart Effect" based on the research of Rauscher and Shaw (1993) that suggested that listening to Mozart's *Sonata for Two Pianos in D Major* could causally enhance the child's ability to create, maintain, transform, and relate complex mental images through time. It is exactly this type of reasoning that is involved when learning mathematics, science, physics, and chess.

The authors encourage the reader to step outside his/her comfort zone to consider the uniqueness of experience. For example, students who participate in the same group discussion will derive their own unique conclusions because everybody has had their own unique experiences prior to the discussion. Additionally, each student will have had a unique experience during the discussion; thus each student's conclusion is justifiable. Experiences must, therefore, be the primary focus in the teaching process. Teaching is a complex endeavor. While we understand some of the components of teaching and learning, according to the theory of chaos, there are numerous variables that influence whether or not a learner will master a specific concept. Unlike linear learning, which is teacher-centered, the experience of the learner will determine whether or not a concept is worth remembering. In a teacher-centered classroom there is only one correct answer; in a student-centered classrooms answers are multiple and all are correct. Student-centered learning focuses upon critical thinking from multiple and diverse perspectives. Based upon the interest and the experience of the learner, it is the natural way to learn. Therefore, the teacher must change his/her role from one who is the intellectual boss of the classroom to one who employs a variety of pedagogical modalities that address the individual experiences of the learners. Thus, chaos is the only way to learn.

Rauscher F.H., Shaw G.L., Ky K.N. Music and spatial task performance, *Nature* 1993; 365:611.