Foreword

One of the biggest breakthroughs in our understanding of how the human mind operates and, therefore, how human beings learn is our growing awareness of the importance of imagery. Psychologist Allan Paivio (1971, 1991) is probably best known for his explanation of this dynamic within his dual coding theory or DCT. Briefly, within DCT Paivio explains that anything we have in permanent memory is stored in two ways—hence the title "dual coding."

One way of storing information is as abstract characteristics that manifest as semantic or linguistic elements. Paivio refers to these representations as *logogens.* To illustrate, a student who knows the concept of an atom has stored logogens about it. The student knows the abstract characteristics of atoms—they are the smallest component of an element having the characteristics of the element, they contain a nucleus made up of neutrons and protons, they contain electrons bound to the nucleus by an electrical attraction, the number of protons determines the identity of the element, and so on.

The second way knowledge is stored in permanent memory is as images. These are referred to as *imagens*. There are a number of very interesting aspects of imagens that have strong implications for classroom instruction. First, imagens are not merely mental pictures. Rather, they are composed of mental images, smells, tastes, sounds, and kinesthetic sensations. For example, along with the abstract characteristics of an atom, a student would have a mental picture of the neutrons, protons, electrons, and their interactions. These images might include sound, smell, taste, and kinesthetic sensations.

Second, images are absolutely necessary for understanding. Without imagery or imagens, we really don't know something in depth even if we can recite its abstract characteristics. Many teachers have experienced students who can provide succinct definitions or descriptions of concepts such as the atom but who do not truly understand them. It is our rich images about concepts that allow us to understand them and manipulate them.

Unfortunately, when we examine current classroom practice we see that the vast majority of instructional activities are geared toward the linguistic aspects of learning—in Paivio's terminology, geared toward the development of logogens. We talk to students, we read to them, we have them read, and so on. Yet if we do nothing explicitly to enhance the generation of images, we leave this process up to the student. In fact, one might say we leave the better part of learning up to students.

Fortunately, there are creative teachers who systematically employ instructional activities that enhance the development of images relative to the content being taught. Even more fortunately, there are educators who develop imagery-based instructional systems that can be used by a wide range of teachers across a wide range of subject areas. Christine Ewy is one of those educators. The system and techniques described in this book mark the beginning of what may be nothing short of a revolution in classroom pedagogy. The reader will find this book not only highly practical but also quite provocative in its implications.

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REFERENCES

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