Communications theory dates to the Greek philosophers Plato and Aristotle, but became a recognized academic field in the 1940s during World War II (Newby, Stepich, Lehman, & Russell, 1996). Media theorists have analyzed the development of new media and how they are connected to broader social evolution. These theories are useful to examine in regard to understanding computer learning environments as a new medium because they place it in a larger historical context.

A tradition of scholarship focusing on communications effects led to research on media industries and military uses. Many scholars concentrate simply on the short-term effects of media (Klapper, 1960). However, others look at media more broadly, particularly in terms of the transmission of ideology. An important influence on media theory was the Department of Sociology at the University of Chicago in the 1920s and 1930s, where a theory showing the importance of communication in social life using ethnographic research methods to explore complex social interactions emerged.

Various scholars, including Lewis Mumford and Harold Innis, comment on the evolution of media and analyzed how they connect to other historical developments. In *Technics and Civilization*, Mumford (1934) argues that the printed sheet was the first completely mechanical achievement in the West. Writing was a great labor-saving device over oral communication and released people from a dependence on the present time for communication. Building on Mumford’s work, Innis (1972, 1991) argues that studying forms of communication offers possibilities of understanding government and even the rise and fall of empires in Western civilization. Changes in political form coincide with the adoption of new media. Thus, the shift in Egyptian civilization from a monarch to a more democratic organization coincided with the shift in emphasis from stone to papyrus. The properties of the dominant medium, along with the institutional structure, facilitate knowledge and power. According to Innis, the Roman Empire involved the destruction of the oral tradition and the imposition of writing.

Education has been dominated by the written medium since the rise of the Roman Empire. Innis promotes the use of dialogue in education. The oral tradition is important because it emphasizes dialogue and works against monopolies of knowledge. Aware of John Dewey and Robert Park’s work in the Chicago School, he argues for an oral-tradition revival in education. A central force in educational theory, John Dewey in *The Public and Its Problems* (1927) sees communication media as extensions of a free press with the purpose of disseminating freedom. However, Innis claims that the conditions of freedom of thought are in danger of being destroyed by technology and the mechanization of knowledge.

According to Meyrowitz (1986), electronic media bring back a key aspect of oral societies: simultaneity of action, perception, and reaction. In this way, sensory experience again becomes a prime form of communicating. Yet electronic media are far different from oral communication because they are not subject to physical limitations of time or space. Print allows for new ways of sharing knowledge, while electronic media tend to foster new types of shared experience. Meyrowitz views television and other electronic media as breaking the age-old connection between where we are and what we know or experience.

Some scholars have focused on the history of printing. Eisenstein (1979) argues that the preservation of knowledge was the most important aspect of printing. The notion that information is best preserved by being public, not private, was a key element of printing as an advancement in civilization, and it ran counter to the previous secretive nature of knowledge. Additionally, Eisenstein sees the increasing familiarity with numbered pages, punctuation marks, section breaks, running heads, and indices as helping to reorder the thought of all readers. She argues that a reading public is more individualistic than a hearing one. Eisenstein points out that both religious and technical texts spread widely with the rise of the printing press. Consequently, both religious and scientific traditions were greatly affected by the advent of printing. In opposition to