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The Knowledge Medium: Designing Effective Computer-Based Educational Learning Environments
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Chapter XIII

Conclusion

medium, n: 1. A middle quality or degree of intensiveness, etc. 2. A substance or surroundings in which something exists, moves, or is transmitted; an environment (Hawkins, 1986, p. 521).

tool, n: 1. A thing (usually something held in the hand) for working upon something. 2. A simple machine, e.g., a lathe (Hawkins, 1986, p. 867).

A computer is not only a simple machine, but a significant new surrounding in which learning exists, moves, and is transmitted. We began this book by asking key questions about how computer-based educational environments are created. What are the specific properties of the new medium? What are its specific advantages for education? What content is best delivered through this medium? What are the most effective techniques for the design of computer learning environments? We examined the notion of computer as medium and what such a notion might mean for education. Finally, I suggested that the understanding of computers as a medium may be a key to re-envisioning educational technology. In this chapter, I pull together the data presented from the two studies, filter it through the research literature discussed from a wide-ranging and eclectic group of fields, and draw some conclusions.

In order to address the questions posed at the beginning of this book, I divided it into two parts: the first part focused on computer-based learning and theory and practice, while the second part looked at the issues connected with considering the computer as a medium. In other terms, the first part was about the things we know from years of research, while the second part is about a vision for the future arrived at in this book through combining science and the humanities. In Chapter Two, a brief analysis of the history of both educational technology and relevant learning theory was presented. In the next two chapters, the two main approaches (tutorial and group) to distance learning were examined. In Chapter Three, the specific methods and issues connected to the tutorial methods were discussed with a particular emphasis on customization, profiling, and agents. In the fourth chapter, group learning methods were investigated. The research literature on virtual teams, interdependent tasks, community formation, and specific techniques for organizing group tasks in computer educational environments was discussed. Then in Chapter Five, the literature on human-computer interaction was examined with an eye towards understanding how it may be especially relevant to education. In the following chapter, the issues of interactivity and navigation in educational environments were then examined. In Chapter Seven, computer tools for learning such as concept maps, knowledge modeling and learning through computer programming were considered. The first part of the book ended with a look at teaching and faculty issues.

In the second part of the book, we considered the ramifications of understanding computer software used for educational purposes as a new medium. In Chapter Nine, broad issues such as phenomenology and ideology of film were examined, as were the history of film and still photography, documentary film and recent film theory. In the following chapter, dramatic structure, genre and editing were considered. In Chapter Eleven we looked at specific issues such as point of view, subjectivity, and the psychoanalytic interpretation of the process of viewing. In Chapter Twelve, the ramifications of the recent narrative psychology movement on computer environments were examined particularly as they relate to the use of case studies and simulations.

The conclusion of this book is divided into three sections. The first section describes the current practices of distance learning and approaches to designing educational software. The second part discusses the conclusions of the research presented that, to my mind, clearly indicate certain guidelines for good practice in educational software design. The third section explores visionary notions of what distance learning in the future might be. I've structured my concluding remarks thus because it is important to separate out, in this early stage of development of distance learning, what we know with some degree of certainty from what we imagine or

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