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The role of cognitive theory in human-computer interface

Patricia A. Chalmers

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Abstract

Many computer users have trouble learning and remembering information presented on a computer screen. Based on cognitive theories, part of the reason for lack of retention is hypothesized to be the user's inability to form a mental picture, or schema, of the information presented via a computer screen. In order to form a schema, users need to be able to understand where newly acquired knowledge fits into "the big picture". However, computers and the information on them are so infinite, users may have trouble thinking in terms of a big picture. When on a website, for example, how many times have you asked yourself, "Where am I?" or "Where was I?" or "Where am I going?" Likewise, for many learners, there may be little sense of place when learning with the assistance of a computer. It is proposed that these problems of the inability to form a schema and disorientation with the human-computer interface are worth researching, not only for better retention, but also for increased satisfaction among users. In addition to cognitive theories of learning, retention, organization, and individual differences, human-computer interface guidelines are also addressed. For

individual differences, human-computer interface guidelines are also addressed. For this paper, the phrase *human-computer* interface is also called the *user interface* because of the emphasis on the end user, or the student. It may also be called simply the interface. Human-computer interface is defined as the point of contact between the computer and the computer user.



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Keywords

Human-computer interaction; Human-computer interface; HCI; CHI; Human factors; Cognition; Cognitive theory; Interface design; Interface development; Software interface; Usability

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