

- If you took this out and then went to another machine and tried to withdraw the same amount, what would happen?
- What is on your card?
- How is the information used?
- What happens if you enter the wrong number?
- Why are there pauses between the steps of a transaction?
- How long are they?
- What happens if you type ahead during the pauses?
- What happens to the card in the machine?
- Why does it stay inside the machine?
- Do you count the money? Why?

Next, ask two other people the same set of questions.

- (b) Now analyze your answers. Do you get the same or different explanations? What do the findings indicate? How accurate are people's mental models of the way ATMs work? How transparent are the ATM systems they are talking about?
- (c) Next, try to interpret your findings with respect to the design of the system. Are any interface features revealed as being particularly problematic? What design recommendations do these suggest?
- (d) Finally, how might you design a better conceptual model that would allow users to develop a better mental model of ATMs (assuming this is a desirable goal)?

This exercise is based on an extensive study carried out by Steve Payne on people's mental models of ATMs. He found that people do have mental models of ATMs, frequently resorting to analogies to explain how they work. Moreover, he found that people's explanations were highly variable and based on ad hoc reasoning.

Summary

This chapter has explained the importance of understanding users, especially their cognitive aspects. It has described relevant findings and theories about how people carry out their everyday activities and how to learn from these when designing interactive products. It has provided illustrations of what happens when you design systems with the user in mind and what happens when you don't. It has also presented a number of conceptual frameworks that allow ideas about cognition to be generalized across different situations.

Key Points

- Cognition comprises many processes, including thinking, attention, learning, memory, perception, decision-making, planning, reading, speaking, and listening.