**Questions to Consider**

Chapter 11: Problem Solving

* **What kind of problems do you solve every day?**

Some of the problems we solve every day are well-defined, with clearly stated goals and strategies for achieving those goals. Others are ill-defined, with fuzz­ier goals and fewer clear pathways to their solutions.

* **How do you solve problems: through trial and error, through conscious deliberation, or do solutions just suddenly occur to you?**

Trial and error works as a strategy for relatively simple problems, but we typically use other strategies for more complex problems. Often we break the problem down into subproblems, working on solving those to achieve our larger goal. Sometimes we get stuck until we change how we represent the problem and a solution emerges.

* **Why are some problems more difficult to solve than others?**

Problems with clearly defined goals and constraints are typically easier to solve than those that are less clear. Problems that we have had past experience with are typically easier than those that are new to us. Problems that require us to represent relevant infor­mation in a way different from how we usually think of things are also typically difficult.

* **What gets in your way when trying to solve problems?**

We solve problems within our cognitive systems, and sometimes those systems have limitations that impact our ability to solve problems. We have limits on how much information we can attend to and hold in working memory at one time. To overcome this, we often chunk information together. Sometimes the information is chunked in a way that facilitates find­ing a solution. However, other times the information is grouped together in a way that interferes with find­ing a solution. Sometimes the problem has so many potential paths to achieving a goal that we can’t con­sider them all and as a result miss the right one.

* **How do expert problem solvers differ from novices?**

We all draw upon our past experiences to solve prob­lems. Within their domain of expertise, experts have a much larger array of experiences compared to nov­ices. This experience allows experts to focus their attention on the most relevant aspects of a problem, to focus on the underlying structure of a problem instead of surface features, to represent a problem in the most efficient way, and to retrieve past solutions to similar problems.