**DOET-01 Summary of Chapters 1-2**

**Chapter 1:**

1a. What is discoverability and what are the six design principles that contribute towards discoverability?

Ans: Discoverability is it possible to even figure out what actions are possible and where and how to perform them? It is possible to determine what actions are possible and the current state of the device.

Discoverability results from appropriate application of five fundamental psychological concepts which are affordances, signifiers, constraints, mapping, and feedback. But there is a sixth principle perhaps most important of all is the conceptual model of the design.

The term affordance refers to the relationship between a physical object and a person (or for that matter, any interacting agent, whether animal or human, or even machines and robots). The proper affordances exist to make the desired actions possible.

The term signifier has had a long and illustrious career in the exotic field of semiotics, the study of signs and symbols. Effective use of signifiers ensures discoverability and that the feedback is well communicated and intelligible.

The term Constraints is providing physical, logical, semantic, and cultural constraints guides actions and eases interpretation.

The term mapping is the relationship between controls and their actions follows the principles of good mapping, enhanced as much as possible through spatial layout and temporal contiguity.

The term feedback is some way of letting you know that the system is working on your request. There is full and continuous information about the results of actions and the current state of the product or service. After an action has been executed, it is easy to determine the new state.

The term conceptual model is an explanation usually highly simplified of how something works. The design projects all the information needed to create a good conceptual model of the system, leading to understanding and a feeling of control. The conceptual model enhances both discoverability and evaluation of results.

1b. How do the three types of conceptual model in Figure 1.11 differ and how are these related?

Ans: People create mental models of themselves, others, the environment, and the things with which they interact. These are conceptual models formed through experience, training, and instruction. These models serve as guides to help achieve our goals and in understanding the world.

The designer’s conceptual model is the designer’s conception of the look, feel, and operation of a product. The system image is what can be derived from the physical structure that has been build (including documentation). The user’s mental model is developed through interaction with the product and the system image. Designers expect the user’s model to be identical to their own, but because they cannot communicate directly with the user, the burden of communication is with the system image.

This figure indicates why communication is such an important aspect of good design. No matter how brilliant the product, if people cannot use it, it will receive poor reviews. It is up to the designer to provide the appropriate information to make the product understandable and usable. Most important is the provision of a good conceptual model that guides the user when thing go wrong. With a good conceptual, people can figure out what has happened and correct the things that went wrong. Without a good model, they struggle often making matters worse.

1c. In one sentence, explain the paradox of technology, in your own words.

Ans: In simple and my own words I understand that how the technology change so fast and with that we follow the technology as like trends or fashion. I like the watch example that they said most people don’t wear watch because they have phone and electronic device which shows the time. Technology offers potential to make life easier and more enjoyable each new technology provides increased benefits. Some of the new things are hard to understand first time but it helps once you start use regularly. The same technology that simplifies life by providing more functions in each device also complicates life by making the device harder to learn, harder to use.

**Chapter 2:**

2a. Explain how we bridge the Gulfs of Execution and Evaluation (in Figure 2-1) by engaging with the seven stages of the action cycle (Figure 2-2).

Ans: The gulfs of execution and evaluation. When people encounter a device, they face two gulfs: the gulf of execution, where they try to figure out how to use it, and the gulf of evaluation, where they try to figure out what state it is in and whether their actions got them to their goal.

The specific actions bridge the gap between what we would like to have done (our goal) and all possible physical actions to achieve those goals. After we specify what actions to make, we must do them the stages of execution. There are three stages of execution that follows from the goal: plan, specify, and perform. Evaluating what happened has three stages: first, perceiving what happened in the world; second, trying to make sense of it (interpreting it); and, finally comparing what happened with what was wanted.

2b. What “level” of cognitive processing (Figure 2-3) is involved at each stage of the action cycle (Figure 2-2) – and how does it affect human behavior at each stage?

Ans: All three levels of processing work together to determine a person’s cognitive and emotional state. Visceral response is at the lowest level: the control of simple muscles and sensing the state of the world and body. The behavioral level is about expectations, so it is sensitive to the expectations of the action sequence and then the interpretations of the feedback. The reflective level is a part of the goal and plan setting activity as well as affected by the comparison of expectations with what has actually happened.

Most behavior does not require going through all stages in sequence’; however, most activities will not be satisfied by single actions.

The most basic level of processing is called visceral. This is sometimes referred to as the lizard brain. All people have the same basic visceral responses. These are part of the basic protective mechanisms of the human affective system, making quick judgements about the environment: good or bad, safe or dangerous.

The Behavioral level is the home of learned skills, triggered by situations that match the appropriate patterns. Actions and analysis at this level are largely subconscious. Even though we are usually aware of our actions, we are often unaware of the details.

When we play a sport, we are prepared for action, but our responses occur far too quickly for conscious control: it Is the behavioral level that takes control.

The reflective level is the home of conscious cognition. As a consequence, this is where deep understanding develops, where reasoning and conscious decision-making take place. It is a reflection or looking back over them, evaluating the circumstances, actions, and outcomes, often assessing blame or responsibility.

2c. How do signifiers, constraints, mappings, and a conceptual model guide human behavior in bridging the stages of the action cycle underlying the Gulf of Execution? How do the use of feedback and a conceptual model guide human behavior in bridging the stages of the action cycle underlying the Gulf of Evaluation? (See Figure 2.7).

Ans: The psychology of human action behavior in bridging the stages of the action cycle we bridge the gulf of execution through the use of signifiers, constraints, mapping, and a conceptual model. We bridge the gulf of evaluation through the use of feedback and a conceptual model. Information must match human needs.

Both feedback and feedforward need to be presented in a form that is rapidly interpreted by the people using the system. The presentation has to match how people view the goal they are trying to achieve and their expectations.

Signifiers is the effective affordances ensures discoverability and that the feedback is well communicated and intelligible.

Constraints is the providing physical, logical, semantic, and cultural constraints guides actions and eases interpretation.

Mapping is the relationship between controls and their actions follows the principles of good mapping, enhanced as much as possible through spatial layout and temporal contiguity.

Conceptual model is the design projects all the information needed to create a good conceptual model of the system, leading to understanding and a feeling of control. The conceptual model enhances both discoverability and evaluation of results.

Feedback is there is full and continuous information about the results of actions and the current state of the product or service. After an action has been executed, it is easy to determine the new state.