
A Study of Various Stages In Human Computer Interaction

Vineet Kishore Srivastava¹, Rakesh Chandra Bhadula², Ajay Sharma³, Sanjeev Kumar Shah⁴, V.N. Kala⁵& Satya Jeet Singh⁶

¹Department of Mathematics, Uttarakhand, University, Dehradun

²Department of Mathematics, Graphic Era Hill, University, Dehradun

³School of Management, Graphic Era Hill, University, Dehradun

⁴Department of ECE, Uttarakhand, University, Dehradun

⁵Department of Applied Science, GBPC, Pauri Grahwal

⁶Department of Mathematics, Graphic Era, University, Dehradun

Abstract.

Aim of this study is to recognize more deeply how computer and human interact together. This is to study the various of actions, which is performed to communicate with computers and humans. In each stage of actions, it is concluded that goal cannot be achieved without performing sequence of functions and finally comparison can be made to check the intentions and user goals. Designing of HCI is also studied in our study and it is analysed that five stage of designing play's important role to make Human computer interactions. After applying these five stages of designing human can easily communicate with computer.

Keywords. DataHuman computer interaction, Design, User Interface, Communication

1. INTRODUCTION

Human computer interaction came into existence in the 1980s and computers were designed in such a way that humans can use complex technology in a safe, comfortable, efficient and enjoyable manner. Many researchers from computer and psychological background who may have interest in this area are studying the behaviour as well as designers and people from industry and commercial background, HCI is a saleable product for them. Researchers are developing the HCI in such a way the human can interact with the computer in a safe and comfortable mode.

Card et al. (1983) studied the GOMS (Goal Operators Method System) model for HCI, in this model one has to identify the goal then the user has to operate the metal activity to complete the goal. Gregor and Newell (2001) presented the HCI model to study organizational strategies for some old adults. Michel et al. (2014) studied a new method for skin deduction in colour image. In this method they used texture based discriminative skin presence feature, which is very helpful for Human computer interaction. Kawulok (2012) presented discriminative skin presence features, which is based on discriminative textural features.

Card et al. (2018) investigated the complexity between the human and computer interaction and described the kinds of actions those arises when more than two artifacts interact. They described communication between computers and humans with specific models and characteristics. Understanding the communication between human and computer involves connectivity, assessment and applications, this makes easy and convenient computer user interface. The term human computer interaction was invented a few years ago, but industry has recognised its need and importance in beginning of 19th century and working to improve this area. Basic purpose of this chapter to explore the critical actions in human computer interaction. Now a days computer interaction knowledge is vital because in every field of human life, computer communication is needed (Sawer &Ting , 2014).

Human computer interaction can be described in two ways, first one is direct communication and second one is indirect communications, direct communication includes various types of inputs like touch, sound, pointer etc. which received by input devices, control unit process this communication. While indirect communication involving the background process in human computer interaction. (Sunder et al., 2016).Tan &Nijholt (2010), suggested that the computer technology is ranging from small computer desktops to large one, all these involve input system, processing control system and output system. They described that the group of human beings who are confronted with such a problem can be encountered with computer technology.

Klumpp et al. (2019) conferred different ways to stop an artificial partition in HCI by social sustainability and logistics creativity. In logistics and supply chain process HCI plays an important role to resolve the problems. Zhang, P., and Li, N. (2004) studied MIS (Management Information Systems) as a subfield of Human Computer Interaction and revealed the relations among human interaction with information technology. He recognized the importance of HCL especially in contest of business administration, managerial and organization.

2. HUMAN COMPUTER INTERACTION WITH STAGES OF ACTIONS

Stages of Actions: In Human computer interaction any task can be obtained by creating goals and goal can be achieve by applying sequence of various actions. These stages can be divided in the following seven categories.

- (i) Forming the Goals (ii) Intentions (iii) Specify the actions (iv) Execution (v) Perceiving the states of the world (vi) Interpreting the state of the world (vii) Comparison to intentions and user's goals.

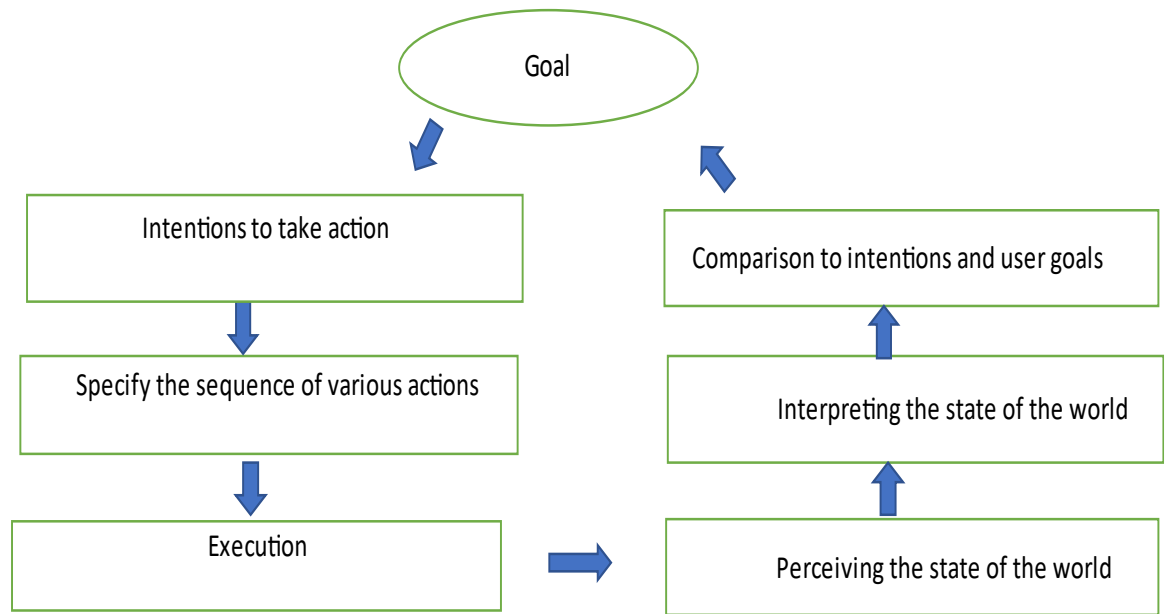


Figure 1: Human Computer Interaction with Stages of Actions

3. HUMAN COMPUTER INTERACTION AND DESIGNING

This focus upon evaluation displays a problem into modelling. Designing components plays an important role to achieve the goal. Human computer interaction can be made in such a way that every human can interact with computer. Landauer (1995) conducted a study through econometric analysis of computer industry, he suggested that design flaws have to be identified in beginning designing user interface and interaction because this makes work easy and cost effective.

Basically, there are five stages of designing (i) Visibility (ii) Affordance (iii) Legible mapping (iv) Feedback (v) Constraints.

- (i) **Visibility:** In Human computer interaction visibility means the mapping between intended actions and actual operations. These sequences of operations are used to communicate with computer.
- (ii) **Affordance:** Affordance means actual properties of the thing, which can be determine just how they could possibly be used in the Human Computer

interaction. Thus, affordance providing leads to operate the computer i.e., machine

- (iii) **Mapping:** It is the relationship between the control and the results. These results can be obtained by doing interaction between the computer.
- (iv) **Feedback:** - This is important process of every interaction; it sends back to user. What communication has user done with the computer.
- (v) **Constraints:** This part limit the user action to the system. This part reduced the error by performing the communication between human and computer.

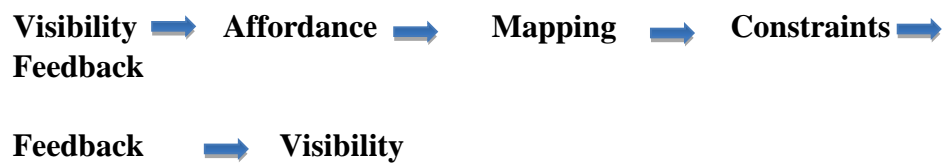


Figure 2: Human Computer Interaction and Designing

4. CONCLUSION:

In this chapter main focus remained to establish series of actions in the communication between human and computer. Seven stages of action are studied and it is concluded that perfect completion of actions in each stage are as important as to achieve the goal. Five stages of designing i.e., visibility, affordance, mapping, feedback and constraints are as much important as the feedback process, in such process interaction can be send back to user, what communication has human done with computer. In computer-based learning i.e., human computer interaction, computer experts can design a system that can be user friendly. It is essential that communication should be executed by the user according to his or her requirement.

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