Study of Human computer interaction

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Abstract

HCI is an interdisciplinary field that studies how people interact with computers. To better understand and ease user-machine interactions, it integrates knowledge from the fields of computer science, cognitive psychology, behavioural science, and design. Now more than ever, HCI is a regular part of our life. In fact, you can find it in just about any area. We utilise it to get answers to questions, organise our money, meet new people, further our education or professional development, and broaden our horizons in terms of entertainment options. Some of us can't even fathom a life without our gadgets now that they've become so integral to the modern experience. "As a result, some of us suffer a mild kind of worry or fear known as nomophobia whenever we have to travel. Nomophobia, an anagram of no mobile and phobia, describes a relatively recent human-machine dynamic.

Keywords– E-learning, HCI, perceptive interfaces, speech-based interface, vision-based interface

Introduction

Interaction between Humans and Computers (HCI) It is generally seen as the meeting point of several disciplines, including computer science, the behavioural sciences, design, and others. HCI is a field concerned with the design, assessment, and implementation of interactive computer systems for human use and the study of key phenomena surrounding them, according to the Association for Computing Machinery. User happiness is a major focus area in human-computer interaction. Improvements in usability and responsiveness to user input are central to the field of human-computer interaction, or HCI. HCI focuses on these particular areas:

- Tools and techniques for creating user interfaces
- Techniques for creating usable interfaces
- Interface analysis and comparison methods
- making progress on novel user interfaces and interaction methods.

Long-term, HCI aspires to create systems that lower the wall of confusion between the user's mental model of the work at hand and the computer's interpretation of that task.

E-learning

Technology-enhanced learning (TEL) is a broad concept that includes specialised subsets of TEL, such as online or Web-based education. Some claim that e-learning is pedagogy enabled by digital technology, however this definition is not shared by everybody in the e-learning business. More natural ways of engaging with the computer and other electronic gadgets are needed as we advance toward a world where information technology will touch nearly every facet of our lives. The technical foundation is now in place for interactions that fully utilise the perceptual capacities that have thus far distinguished human-human communication.

Computer Medium

Conventional wisdom is that computers are only machines for archiving and rearranging information (Oren, 1995). In human-computer interaction (HCI) literature, however, there are sometimes hints that the computer is a medium, not a tool, and that it could be useful to further study this idea. An appreciation for computers as a medium adds a layer of complexity to the investigation that is becoming increasingly relevant as computer use expands in educational settings.

Models

The model illustrates how a user communicates with a computer.

•   **Norman's model of interaction**

Norman is a user-focus specialist. Norman uses psychological terminology to explain the user's mental activity during typical technology use. The two main parts of Norman's model are execution and assessment. Many sub-steps make up each phase. There are seven separate actions throughout the entire.

The identified steps are:

➢ Building the Target

➢ The process of forming an intent

➢ Defining a course of action

➢ Going through with it

➢ As I see it, the globe is in a condition of

➢ The World as I See It

➢ Assessment of the Results

• **The Interaction Model**

This mode of communication was initially conceptualised by A bowd and Beale as a form of linguistic translation. Both an interaction framework and a translation inside that framework are declared. The four parts of the Abowd and Beale framework each have their own vocabulary.

Those are;

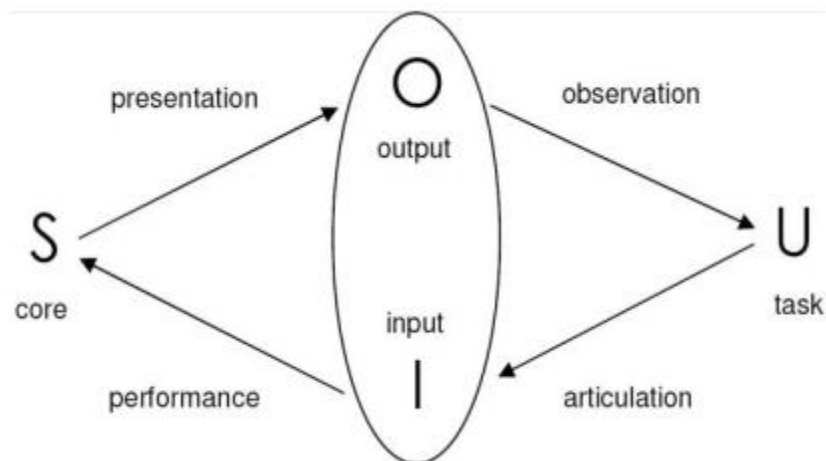➢ User

➢ Input

➢ System

➢ Output

Figure 1: Interaction Model: Abowd and Beale Framework

Structure of HCI

User, computer, and interaction all play crucial roles within the HCI framework, as suggested by the name.

Figure 2 shows three main components of human computer interaction.
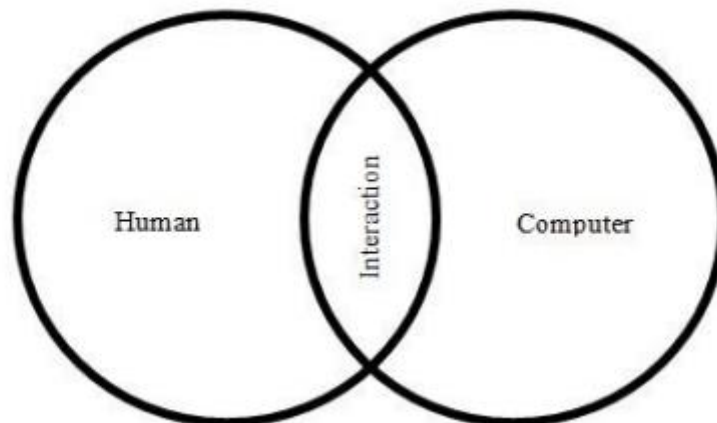
Figure 2: Three components of HCI

- **The user**

In user-centered system design, the user analysis is essential. One such definition of a system's end user is the general public or an HCI practitioner. The system's needs and goals may need a range of values for these variables. The aforementioned goal(s) and task(s) along with the user's prior experience(s) will determine the user's unique classification. According to Danino (2001), a user of HCI is someone attempting to accomplish a goal while employing some form of technological means.

- **The computer**

In human-computer interaction, computer refers to anything from a personal computer to a supercomputer; it can also refer to an embedded system or an information processing engine. A computer is an all-purpose machine that, with a person's assistance, can do a wide variety of mathematical and logical calculations. With today's cutting-edge technology, people may engage with computers in ways that aren't constrained by the conventional desktop or laptop form factor. A Human Computer, However Interfaces between humans and machines are the primary focus of research into interaction. There is always some sort of user interface on each given gadget. Extreme amounts of communication are usually required.

- **The interaction**

Human-machine interaction is a major part of Human Computer Interaction. Humans rely on language for virtually all of their interactions. Also, they use facial expressions, emotions, and body language to bolster their message. Humans have a consistent inclination to respond on a computer in the same ways that they react in the real world,

thus it's important to take a close look at the non-cognitive features of a system's impact on the user.

Conclusion

The literature on human computer interaction is examined, and technological issues such as interaction styles are investigated, as well as the benefits and drawbacks of various approaches." And we looked for more effective interaction styles among the ones that were already available. During the same time, we discovered that dome provided the optimal fit in terms of interaction between a human and a computer. A number of controversies need to be taken into consideration while developing interfaces that are ethical, efficient, and friendly to users for an academic assisting gadget. The findings of this research point to the need for theoretical assistance in the field of human computer interaction while building academically supporting technologies. We have come to the conclusion that in order to design a human computer interaction that is worthy, we need to appropriately select the suitable style of interaction, kind of interface to adequate with the class or group of users for whom it is intended, whereas the human issues need to be taken into consideration. As a result, we advocate many significant ways of interaction as efficient for academic supported devices. These modes of interaction include parallel input, speech recognition, interoperability across devices, and hand writing recognition.

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