

Usability Engineering and HCI for Promoting Root-Level Social Computation and Informatics Practice: A Possible Academic Move in the Indian Perspective

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ABSTRACT

Human-computer interaction talks about designing IT and computing technologies in the context of man-machine interaction. Man-machine interaction (MMI), human-machine interaction (HMI), usability experience design, human-centered designing, user-centered designing are the related areas and responsible for the designing and development of interface of electronics products viz. computers, laptops, systems, mobiles, smart phones, etc. Educational and training is important for the social as well as economic development in several contexts. Knowledge delivery system is the reason for development and also developed nation. A few current and emerging technologies which include big data management, cloud computing, green computing, data science, internet of things (IoT) are also allied with HCI and usability engineering in different contexts. India is a developing country, and more enhancement is possible with integration of IT. In the developed countries, various educational degree and training programs are running at Bachelors, Masters, and Doctoral degrees in the areas of HCI and usability engineering, but in a country like India, such programs are missing. In this conceptual paper, a few aspects of usability engineering and HCI have been explored for creating true IT-enriched society. The paper is also proposed some possible and future potential programs for a healthy social informatics world.

KEYWORDS

CT4D, Developing Country, Digital India, Higher Education, IHCI, Knowledge Society, MMI, Training and Development, Usability Engineering

INTRODUCTION

Human Computer Interaction is today not only a design, evaluation and implementation method of computing systems but also it is a human psychology based tool which is play an important role (Abdelnour-Nocera, J. et.al, 2017; Altbach, P. G., 2002). Emerging tools and technologies have normally used for a friendly and usable computing system. Satisfaction of the users is the major tasks of the Human Computer Interaction including allied domains (Bhattacharya, I., & Sharma, K., 2007; Cruz-Benito et.a., 2016). Usability Engineering which is an allied domains and tools responsible for the creation of higher usability as well as user friendliness. Human cognition, behavioral Research Methodologies empowered by the quantitative and statistical techniques are the key facets for the

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development of usability systems. Designing, implementation, usability enhanced with the audio-video system is the core matter of today's Usability Engineering practice (Churchill, E et.al. 2016; Garcia et.al, 2005). Wireframes including few other prototypes is essentially practiced by the Usability Engineers, globally. Among the Usability Engineering guidelines following (*in Table: 1*) are the

Table 1. Important guidelines for building improved HCI and Usability Systems

Guidelines for Creating Healthy Usable Systems
<ul style="list-style-type: none"> • The ADA Guidelines for accessibility of state and local government websites. • The Guidelines of Web Accessibility Initiative. • The Section 508 government guidelines for all public-sector websites. • The IBM Guidelines for accessibility of websites.

responsible for the creation of healthy and greater usable computing systems.

OBJECTIVES

This conceptual research work which is theoretical in nature, has been conducted to learn and dig out following objectives:

- To dig out the features of Human Computer Interaction and Usability Engineering and other allied areas in brief.
- To learn about the current educational programs and its availability in the developed countries as far as HCI & Usability Engineering is concerned.
- To learn about the current methods and guidelines of HCI and Usability Engineering Systems.
- To know about the basic differences and comparison of Usability Engineering and HCI systems in detail.
- To learn about the need and essentialities of HCI and Usability Engineering in detail.
- To dig out the potentialities of HCI and Usability Engineering in existing degrees and programs in different context.
- To find out the main challenges and opportunities of the Usability Engineering and HCI education systems in Indian academics.

METHODOLOGIES

Like any other conceptual study this is also framed several features of theoretical research. The study has been conducted from the primary as well as secondary sources (which have published in books and journals) in the field of Human Computer Interaction, Usability Engineering, User Experience Designing etc. However, reviews of websites have been also conducted to gain about the emerging features and characteristics of Human Computer Interaction including its principle. Study also explores the common and current uses of HCI in the apps, websites along with online portals. For studying educational aspects of HCI and Usability Engineering i.e. to learn about the potentials and possible educational programs in Indian context, proper educational methods have been utilized. Several educational components, current educational programs were gathered from the educational sites and for that AICTE (All India Council for Technical Education), UGC (University Grants Commission), MHRD (Ministry of Human Resource Development) were taken into consideration. Though, the website of UGC has been considered as core link enter into other universities regarding the study and available programs of HCI as well as in the related areas.

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