

HUMAN COMPUTER INTERACTION CAT

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1. QUESTION I

Which usability principles are especially important in the design of help systems, and why?

Visibility of system status: The design should always keep users informed about what is going on, through appropriate feedback within a reasonable amount of time. When users know the current system status, they learn the outcome of their prior interactions and determine next steps. Predictable interactions create trust in the product as well as the brand.

Flexibility and efficiency of use: Shortcuts may speed up the interaction for the expert user such that the design can cater to both inexperienced and experienced users. Allow users to tailor frequent actions. Flexible processes can be carried out in different ways, so that people can pick whichever method works for them.

Aesthetic and minimalist design: Interfaces should not contain information which is irrelevant or rarely needed. Every extra unit of information in an interface competes with the relevant units of information and diminishes their relative visibility.

Error prevention: Good error messages are important, but the best designs carefully prevent problems from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

User control and freedom: Users need a clearly marked "emergency exit" to leave an unwanted action without having to go through an extended process. When it is easy for people to back out of a process or undo an action, it fosters a sense of freedom and confidence. Exits allow users to remain in control of the system and avoid getting stuck and feeling frustrated.

Match between system and the real world: Use words, phrases, and concepts familiar to the user, rather than internal jargon. Follow real-world conventions, making information appear in a natural and logical order. When a design's controls follow real-world conventions and correspond to desired outcomes (called natural mapping), it is easier for users to learn and remember how the interface works. This helps to build an experience that feels intuitive.

Consistency and standards: Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform and industry conventions. Failing to maintain consistency may increase the users' cognitive load by forcing them to learn something new.

Recognition rather than recall: Minimize the user's memory load by making elements, actions, and options visible. The user should not have to remember information from one part of the interface to another. Information required to use the design (e.g., field labels or menu items) should be visible or easily retrievable when needed. Interfaces that promote recognition reduce the amount of cognitive effort required from users.

2. QUESTION II

Research the country's legislation relating to accessibility of technology for disabled people. What are the implications of this to your future career in computing?

According to the Kenya National Survey for Persons with disabilities conducted in 2007, the aggregate rate of disability in the country is approximately 4.6% translating to around 1.7 million people. In acknowledging the importance of Information Communication Technologies, the United Nation Convention on the Rights of Persons with Disabilities (UNCRPD) has emphasized on the role of the government to make sure that there is availability of the same to disabled persons. The Convention was incepted by the UN General Assembly on 13th December 2006 and has been approved by around 146 nations and signed by 146 countries since September 2010 rendering it a binding agreement since 5th May 2008. Kenya ratified the UN Convention on Rights of Persons with

disabilities (CRUD) on 19 May 2008 and thereafter was a component of the law under Article 2 (6) of the Constitution of Kenya (Kenya National Commission on Human Rights, [KNCHR], 2014). Article 9 of the Convention describes accessibility to ICT as an essential element of the Accessibility Rights. In addition, Article 21 on Freedom of expression, opinion, and access to information particularly mentions that ‘States Parties shall take all appropriate measures to ensure that persons with disabilities can exercise the right to freedom of expression and opinion, including the freedom to seek, receive and impart information and ideas on an equal basis with others and through all forms of communication of their 3 choice...’. The Convention describes communication as incorporating the entire ways of socializing that may get rid of hindrances. In its development blueprint, The Kenya Vision 2030, the state knows technology is a fundamental element of economic success. The nation’s objective of knowledge-oriented economy targets at moving the existing industrial advancement path to creativity where development, acquisition, adaptation, and application of knowledge stays as the main point of economic success. ICT is an essential component of increasing human capital and is mainly dependent on a framework of generating, disbursing, and using data and intelligence which in return plays a big role in spurring higher output; thus, economic development in the long term (Government of Kenya, 2013). The concept “disability divide,” aims at refocusing knowledge of how digital divide impacts disabled people especially, and to deal with the gap existing between them and able-bodied despite developments in assistive technologies and increased recognition of executing a well-known design.

The implications on future career in computing involves better interaction systems to encompass all types of disabilities. This will lead to more employment opportunities occasioned by the demand for such systems.

3. QUESTION III

Discuss the interaction design process.

The steps involved in interaction design include finding the users' needs and wants. This involves discovering a user's real requirements. The second step involves observing people, followed by interviewing them, examining the existing solutions. Analysis is then done to sort and order your findings, so they make sense, by use of a narrative or a story of how someone uses a system or by task analysis which involves breaking down a user's steps/sub-steps. The next step is designing a potential solution according to design guidelines and fundamental design principles (e.g., giving appropriate feedback for users' actions). Prototyping follows, giving users an idea of what the product will look like and letting them test it, and/or giving it to experts to evaluate its effectiveness using heuristics. Implementation and deployment of what you have built is the final step.

User interaction with the interaction system involves instructing, where issuing of commands and selecting of options is done, conversing, where interaction is as if having a conversation, manipulating where interaction with objects by manipulating them is done, and finally, exploring, which is movement through a virtual environment or a physical space.

The characteristics of the Interaction Design Process: An interactive design should be users involved throughout the development of the project. Specific usability and user experience goals are identified, documented, and agreed upon at the beginning. These usability goals are concerned with meeting a usability criteria which includes, effectiveness - how good system is at doing what it is supposed to, efficiency - the way a system supports users in carrying out their tasks, Safety - protecting the users from dangerous conditions / undesirable situations, utility - extent to which the system provides the right kind of functionality so that users can do what they need or want to do, learnability - how easy a system is to learn to use, memorability - how easy a system is to remember how to use, once learned, user experience goals: User experience is what the interaction with the system *feels* like to the users (subjectively). Tail

The iterative process of interaction design involves thinking through a design problem, understanding users needs, coming up with possible models, prototyping models, evaluating them, thinking about design implication, making changes.