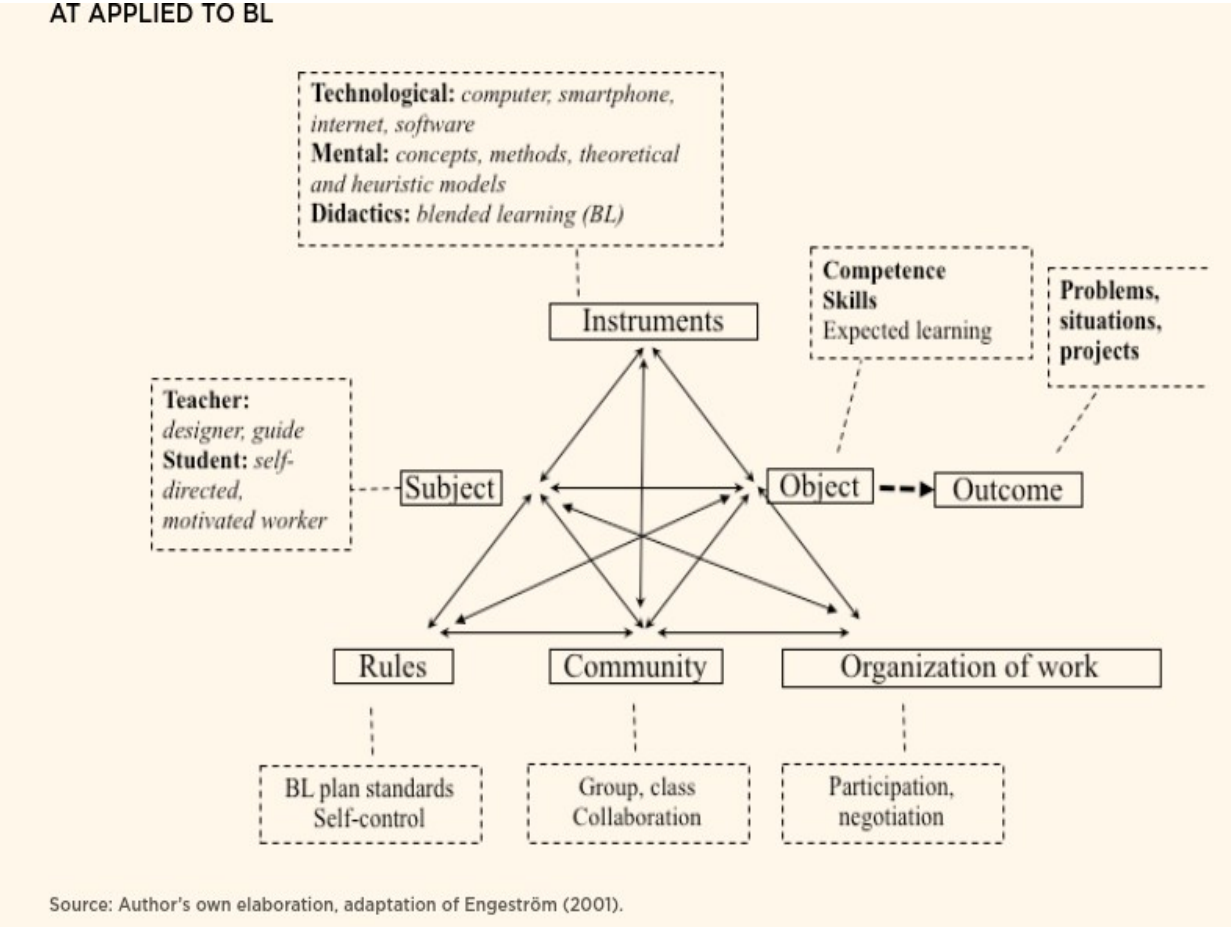
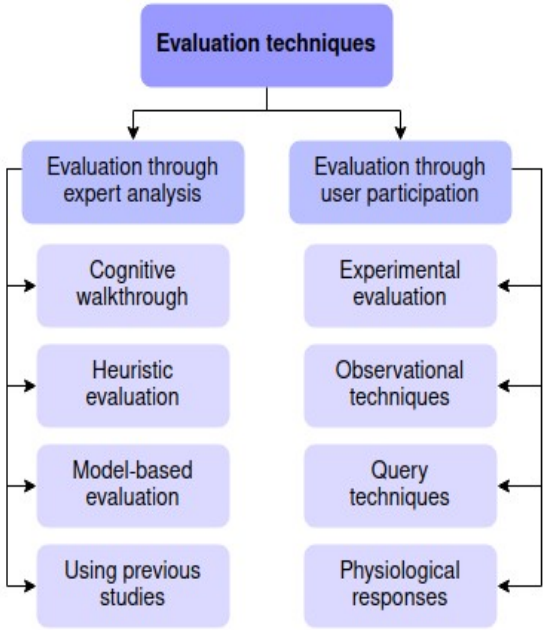
DEPARTMENT OF INFORMATION TECHNOLOGY, NITK SURATHKAL
HUMAN COMPUTER INTERACTION LAB
ASSIGNMENT -II
Course Instructor : Dr Geetha V
22nd Feb 2024

Some Guidelines for Human Computer Interaction

Shneiderman's Eight Golden Rule	Norman's Seven Principles	Nielsen's Heuristic Principles	User Experience Design Principles
• Strive for Consistency. • Cater to Universal Usability. • Offer Informative feedback. • Design Dialogs to yield closure. • Prevent Errors. • Permit easy reversal of actions. • Support internal locus of control. • Reduce short term memory load.	• Use both knowledge in world & knowledge in the head. • Simplify task structures. • Make things visible. • Get the mapping right (User mental model = Conceptual model = Designed model). • Convert constrains into advantages (Physical constraints, Cultural constraints, Technological constraints). • Design for Error. • When all else fails − Standardize.	• Visibility of system status • Match between system and real world. • User control and freedom. • Consistency and standards. • Error prevention. • Recognition rather than Recall. • Flexibility and efficiency of use. • Aesthetic and minimalist design. • Help, diagnosis and recovery from errors. • Documentation and Help	• User Centricity • Consistency • Hierarchy • Context • User Control • Accessibility • Usability

Interface Design Guidelines

General Interaction	Information Display	Data Entry
. • Maintain consistency. • Provide necessary feedback. • Ask for authentication of any non-trivial critical action. • Authorize easy reversal of most actions. • Lessen the amount of information that must be remembered in between actions. • Seek competence in dialogue, motion and thought. • Excuse mistakes. • Classify activities by function and establish screen geography accordingly. • Deliver help services that are context sensitive. • Use simple action verbs or short verb phrases to name commands.	• Exhibit only that information that is applicable to the present context. • Don't burden the user with data, use a presentation layout that allows rapid integration of information. • Use standard labels, standard abbreviations and probable colors. • Permit the user to maintain visual context. • Generate meaningful error messages. • Use upper and lower case, indentation and text grouping to aid in understanding. • Use windows (if available) to classify different types of information. • Use analog displays to characterize information that is more easily integrated with this form of representation. • Consider the available geography of the display screen and use it efficiently.	• Reduce the number of input actions required of the user. • Uphold steadiness between information display and data input. • Let the user customize the input. • Interaction should be flexible but also tuned to the user's favored mode of input. • Disable commands that are unsuitable in the context of current actions. • Allow the user to control the interactive flow. • Offer help to assist with all input actions. • Remove "mickey mouse" input. Note: A **mickey** is a unit of measure for the smallest possible movement of a computer mouse. The speed is determined by how many millimeters you move the mouse with how many pixels the pointer moves on the screen.

Example of Activity Theory for Blended Learning [https://www.scielo.br/j/cp/a/s9rJRGxxGbCss6NLztQHGzh/?format=pdf&lang=en]	**Evaluation Techniques**
	

ASSIGNMENT [Individual assignment]

Consider designing a educational system for alphabet learning for children of age 3-5 years. Design a system where the alphabet is displayed at one side and the child has to learn to draw the letter on the drawing area beside the alphabet display. Using Principles, Guidelines and theories mentioned here, design Alphabet Learning System. Include User Experience design as much as possible.

Assignment 2 [Design of Alphabet Learning System]: 20 Marks **Lab Evaluation Date: 29th Feb 2024**

Describe your proposed Alphabet Learning System and its Design along with corresponding principles, Guidelines and Activity Theory considered in the proposed system [10 Marks]. Describe detailed design according to software engineering model. Explain the User Experience Design considered in your proposed system. [05 Marks]. Presentation and report [05 Marks].

Assignment 3 [Implementation and Demo of Alphabet Learning System]: 20 Marks **Lab Evaluation Date: 07 March 2024**

Implement the proposed Alphabet Learning System using the tools and software of your choice. Justify the same.

Demonstration of working model of proposed Alphabet Learning System [10 Marks]

Creativity and User Experience considered and its demo: [05 Marks]

Presentation and report [05 Marks]

Assignment 4 [Evaluation of Alphabet Learning System] : 20 Marks **Lab Evaluation Date: 14th March 2024**

Evaluate your proposed Alphabet Learning System based on any one evaluation Technique.

Evaluation Technique explanation :[05 Marks], Details on Evaluation technique designed and developed: [05 Marks]

Results of Evaluation technique : [05 Marks], Presentation [05 Marks]