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## Learnability of software

- Aim:
  - Evaluating learnability
  - Writing on-line help
  - Basis for Assignment 2

1

## Qualities of IT applications

- Learnability
  - From novice to expert user
    - Time from first encounter to use
    - Time before understanding what the application can be used for
    - Time before understanding how the representation of the domain enables and restricts operations
  - Intermittent users
    - Time to recall **Trouble shooting**
- Usability
  - Efficiency
    - Time and effort used to achieve the result
  - Satisfaction
    - Comfort and acceptability amongst users
- Usefulness
  - Effectiveness
  - The quality of the result achieved

2

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## Learnability testing

- Heuristic evaluation
- Thinking aloud
- Measuring learning

3

## Heuristic evaluation

- 2 - 3 usability specialists
- Inspect every detail of the application
- Compare to known guidelines (heuristics)
- Each guideline broken
  - a possible problem of learning is noted
- Cheap, first evaluation

4

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## Thinking-aloud, possible interview

- Small number of test persons, stop when no news
  - Right selection of users?
- Design tasks to perform
- Ask them to speak out what they think
  - Remind them of speaking when they fall silent
- Source of error
  - What we say makes us think
- Video-recording, time taking, notes
- Possible interview before and after the session
- Analysis of the users' understanding, misunderstandings and mistakes
- Consumes more time than heuristic evaluation
- For systems to be extensively used externally
  - Preece, Rogers and Sharp (2002)
  - Interaction design: beyond human-computer interaction
  - John Wiley & Sons
  - p.365-8

*Human-Computer Interaction  
(HCI)*

5

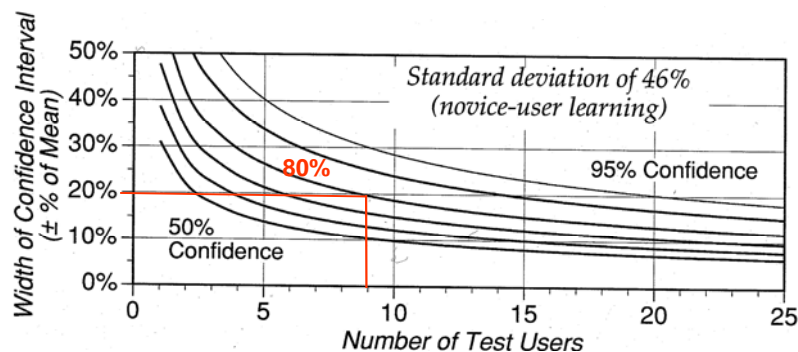
## Measuring skills learning

- Design tasks to perform
- Representative selection of users
- Way of measuring
  - Time taking
  - Counting keystrokes
  - Counting errors
  - Scaled response to questionnaires

6

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Number of test users for measuring time for learning for novices  
The number increases with standard deviation



80% confidence level

20% confidence interval → 9 users

Example

Mean 5 minutes

80% surety that the real mean lies within the 4 – 6 minutes interval

Jakob Nielsen (1993) Usability Engineering. AP Professional, Boston

7

## Design for learnability

- Interface of normal use

*When simple things need instruction, it is a certain sign of poor design*

- Computer applications are complex
  - Additional help

8

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## Design for learnability through normal use

- Visibility
  - Shapes signal proper use
  - Principles of application and data structures visible
- Mapping
  - Immediately understandable relation between symbols and operation
  - Iconic symbols
    - Visual similarity
  - Conventional symbols
    - Learned system of representation
    - Arbitrary letters and shapes
- Feedback
  - Visible result of the operation

» Donald Norman (1998) The Design of Everyday Things. MIT Press

9

## Help functionality in the program

- Responding to the the users' current problem
  - Guidance
  - Not a tutorial primarily designed for teaching
- Minimal distraction from task
  - Recognizable language
  - Recognizable graphics
  - Choice of contents

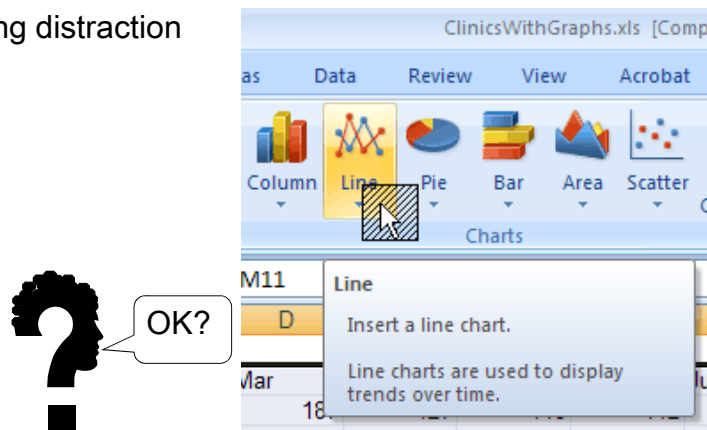
	Skills	Understanding
Information technology		
Information		
Tasks		

10

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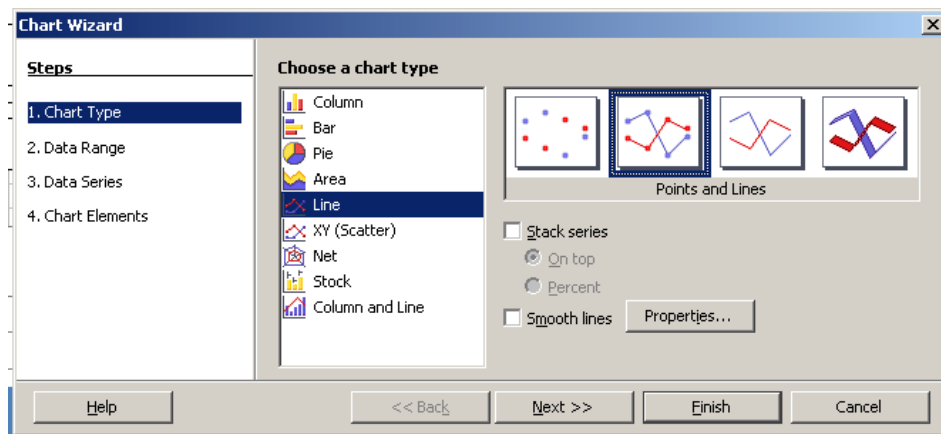
## Context-sensitive help

- Help where the user is at the moment
- No need for navigating in help resources
  - Avoiding distraction



11

## Wizards carrying out the operations



12

# Help functionality



Word Help

styles

Not connected. To see additional and updated content from Office Online click here.

Word > Formatting > Quick formatting

## Change a style

In Microsoft Office Word 2007, Quick Styles are sets of styles that are designed to work together to create an attractive and professional looking document. In most cases, you won't change styles in a Quick Style set because the styles have been designed to complement one another, and it's easier to use a different Quick Style set. But, under certain circumstances, you might want to change the attributes of a style in a Quick Style set.

1. Select text that is styled with the style attributes that you want to change.

For example, to change the attributes of the Heading 1 style, select text that has the **Heading 1** style applied.

**TIP** To view the attributes of a particular style, click the **Styles Dialog Box Launcher**, and then rest your pointer over a style in the list.

Normal No Spacing Heading 1 Heading 2 Title Subtitle

13

## Heuristic evaluation

- Pick a software
- Check the help functionality
  - Context-sensitive?
  - Recognizable language?
  - Recognizable graphics?
  - Contents

	Skills	Understanding
Information technology		
Information		
Tasks		

?

14