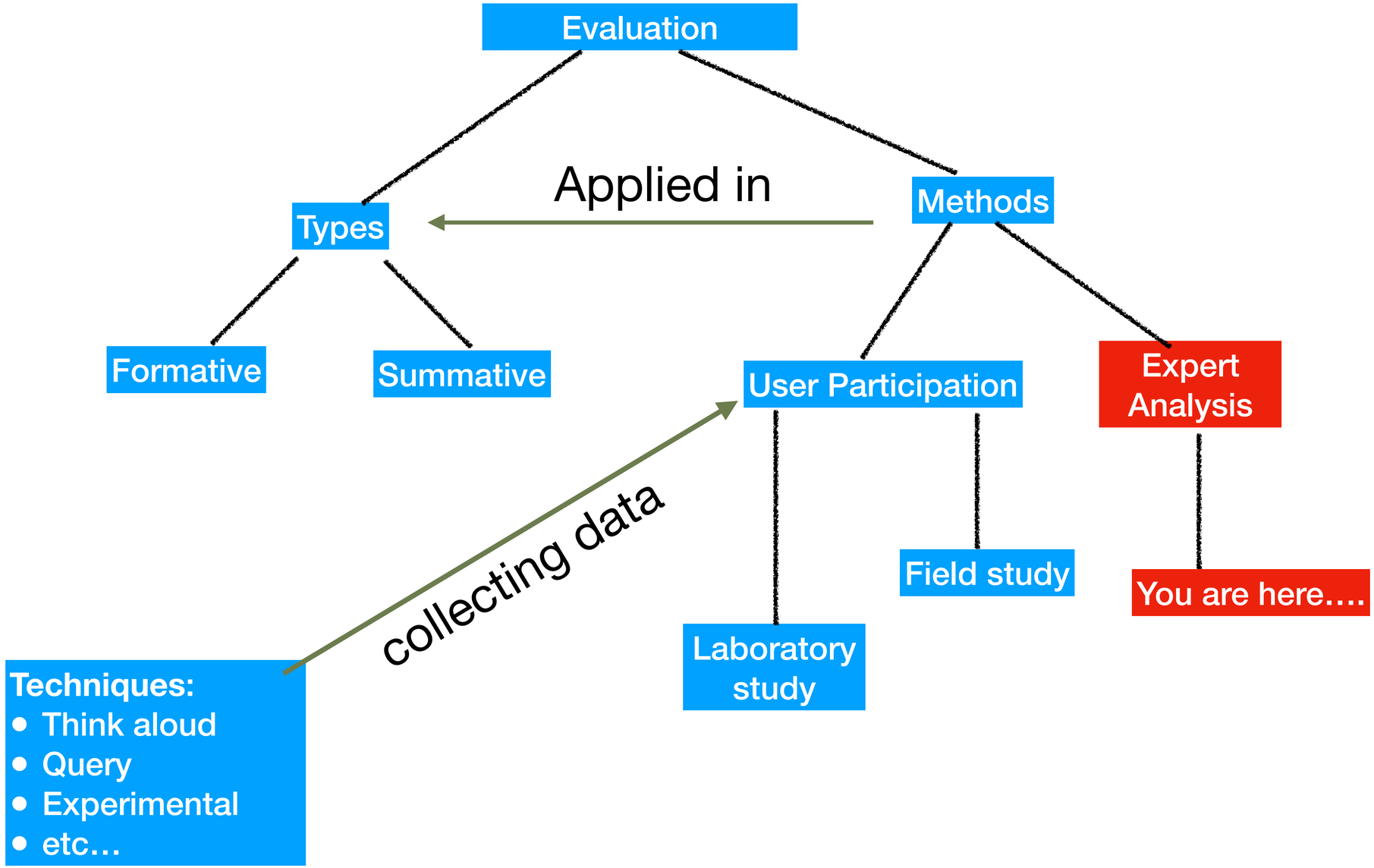
Evaluation (Expert Analysis)

Chapter 9


Evaluation
Applied in
Types
Methods
Formative
Summative
User Participation
Expert Analysis
collecting data
Field study
You are here….
Laboratory study
Techniques:
• Think aloud
• Query
• Experimental
• etc…

Expert Analysis

- Expert reviews is fast and inexpensive <u>because:</u>
  - it does not require the use of a **well-equipped lab**
  - it does not require the involvement of **users**
- The basic intention is to identify any areas that are likely to cause difficulties
- Can be used at any stage in the development process from a design specification, through storyboards and prototypes, to full implementations

- However, they do not assess actual use of the system, only whether or not a system upholds accepted usability principles.

- **Techniques:**
  - Cognitive Walkthrough
  - Heuristic Evaluation

Cognitive Walkthrough

- **Cognitive walkthrough** was developed by Wharton in the early 90s. Initially designed to evaluate walk-up-and-use systems such as automated teller machine (ATM) and museum interactive exhibitions.
- It is a usability evaluation method in which one or more evaluators work through a series of tasks and ask a set of questions from the perspective of the user.
- the main focus of the cognitive walkthrough is to establish how easy a system is to learn (learnability)

- Expert is expected to think and act like the user in trying to use the system for the FIRST TIME.
- May be used in conjunction with the “Think aloud” technique (another usability evaluation method) where experts express their thoughts while executing a set of tasks.
- In this way, the cognitive walkthrough can find the most severe usability problems and desirable new features/functionalities.
- While think-aloud helps find all types of usability problems.

Prior to doing a walkthrough, you need few things:

- A prototype
- **An indication of who are the users** and what kind of experience & knowledge they have
- **A description of the task** the user is to perform on the system/prototype

A

B

Cognitive Walkthrough

	Is the effect of the current action the same as the user's goals?	Is the action visible?	Will user recognize action as the right one?	Will user understand feedback?	Recommendation
Task 1 New User Experience					
Click New Member link	Y	Y	Y	Y	Consider using icon instead of text link that takes the user to the registration page.
Click Registering Here link	Y	N	N	Y	Text link is a little hard to find, consider using icon.
Input first name	Y	Y	Y	Y	
Input last name	Y	Y	Y	Y	
Basic Info:					
Select drop down birthdate month	Y	Y	Y	Y	
Select drop down birthdate day	Y	Y	Y	Y	
Select drop down birthday year	Y	Y	Y	Y	
Contact Info:					
Input home street	Y	Y	Y	Y	
Input home city	Y	Y	Y	Y	
Input home state	Y	Y	Y	Y	
Input home zip	Y	Y	Y	Y	
Input place of employment	Y	Y	Y	Y	
Login Information and Communication Preference:					
Fill in email address	Y	Y	Y	Y	
Re-enter email address	Y	Y	Y	Y	
Input password	Y	Y	Y	Y	
Re-enter password	Y	Y	Y	Y	
Select if you would like to receive communication from Chicago Cares	Y	Y	Y	Y	
Select if you would like to receive communication from Hands On	Y	Y	Y	Y	

Task 1 New User Experience

B

Click New Member link
Click Registering Here link
Input first name
Input last name
Basic Info:
Select drop down birth
Select drop down birth
Select drop down birth
Contact Info:
Input home street
Input home city
Input home state
Input home zip
Input place of employ
Login Information

A

Cognitive Walkthrough

Is the effect of the current action the same as the user's goals?	Is the action visible?	Will user recognize action as the right one?	Will user understand feedback?	
Y	Y	Y	Y	Consider using ico
Y	N	N	Y	Text link is a little h
Y	Y	Y	Y	
Y	Y	Y	Y	

For each task walkthrough considers:

- 1) Is the effect of the action the same as the user's goal at that point?
  - Will the user try and achieve the right outcome? (level of knowledge or experience)
    - For example, the action is to save a document, is 'saving a document' what the user wants to do? (Evaluator think from user perspective)

***Error-mistake, Norman model*

- 2)Will users see that the action is available?
  - for example, where a remote control has a covered panel of buttons or where a menu item is hidden away in a submenu.
  - whether it is visible to users at the time when they will need to use it.

***Design principle-visibility, Norman model*

- 3)Once users have found the correct action, will they know it is the one they need? (associate the correct action with the outcome they expect to achieve)
    - the previous question was about the visibility of the action, this one is about whether its meaning and effect is clear.
    - Poor label/language/jargon.
    - Complex actions (Atl+Ctrl+key)

***Norman model*

- <u>After the action is taken, will users understand the feedback they get?</u>
    - In order to determine if they have accomplished their goal, users need appropriate feedback. (easy to miss, too brief, poorly worded, inappropriate or ambiguous?)
- The walkthrough does not test real users on the system. With a walkthrough you can potentially evaluate the interface by imagining the behaviour of user (persona).

***Design principle-feedback, Norman model*

Heuristic Evaluation

- Proposed by Nielsen and Molich. (develop in 1990s, final set released in 1994)
- Heuristic evaluation involves having a small set of evaluators examine the interface and judge its compliance with recognised usability principles.
- useful for evaluating early design. But it can also be used on prototypes, storyboards and fully functioning systems.

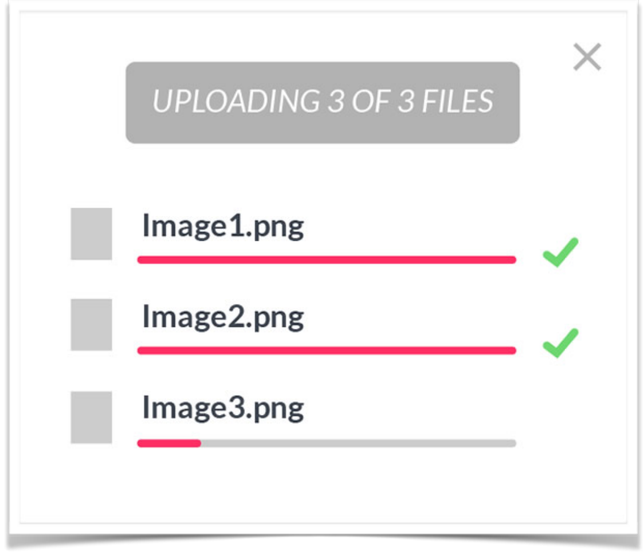
- The general idea behind heuristic evaluation is that several evaluators independently critique a system to come up with potential usability problems.
- Nielsen recommends the use of these 10 as providing the most effective coverage of the most common usability problems.
- Besisde Nielsen & Molich, others principles can be used in Heuristic evaluation, such as: Ben Shneiderman’s 8 golden rules.

Nielsen’s Ten Heuristics(1994) :

1. Visibility of system status
2. Match between system and the real world
3. User control and freedom
4. Consistency and standards
5. Error prevention
6. Recognition rather than recall
7. Flexibility and efficiency of use
8. Aesthetic and minimalist design
9. Help users recognize, diagnose, and recover from errors
10. Help and documentation

1)Visibility of system status:

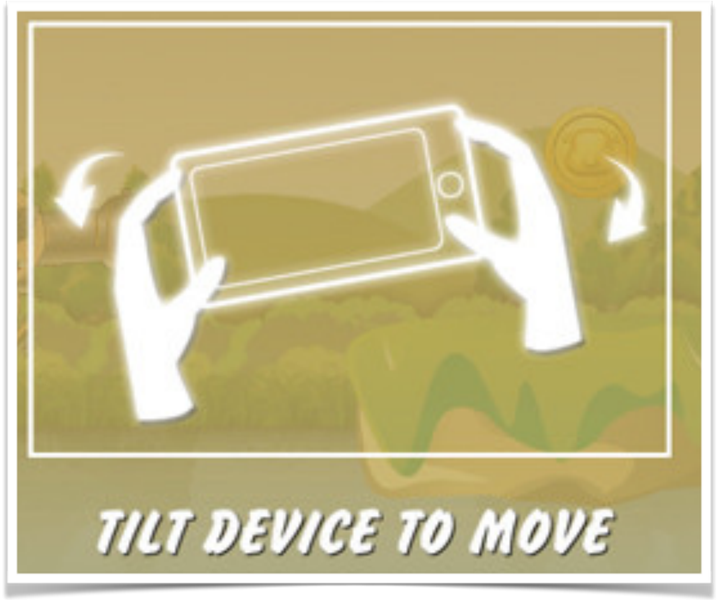
- The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.
- Progress bars , confirmation messages.



2)Match between system and real world

- The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms.

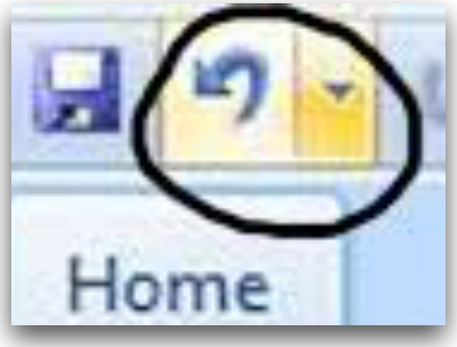
- Follow real-world conventions, making information appear in a natural and logical order.



3) User control and freedom

- Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

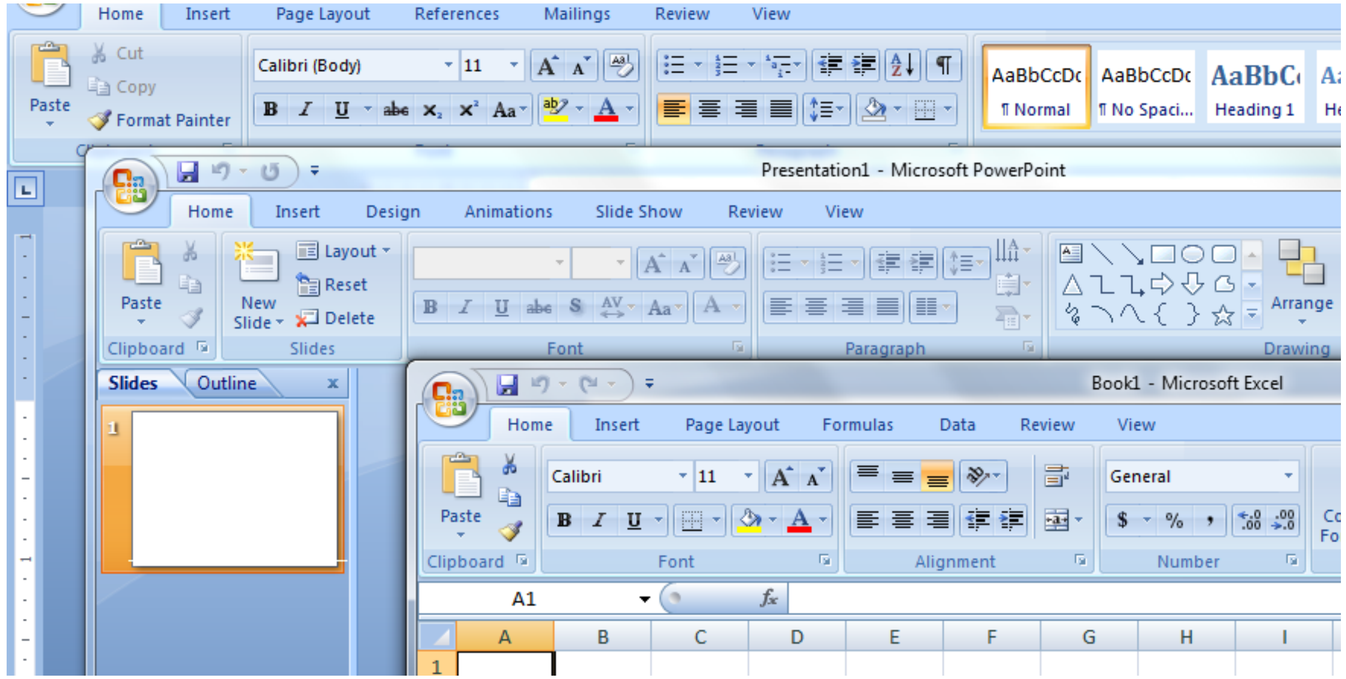
- “Go back” button, “Undo” button, “Remove from Cart” button, “Close Window” button



4) Consistency and standards

- Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

- Button name ‘search’ vs ‘find’, colour



MS Word

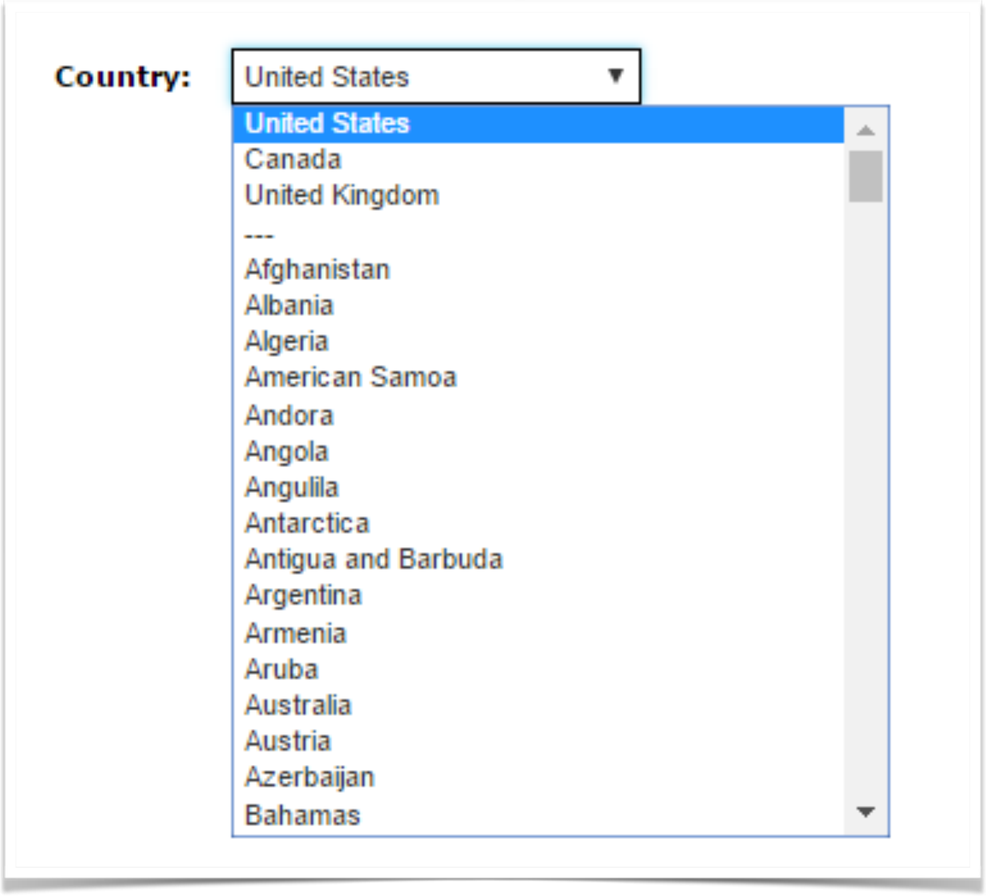
MS Power Point

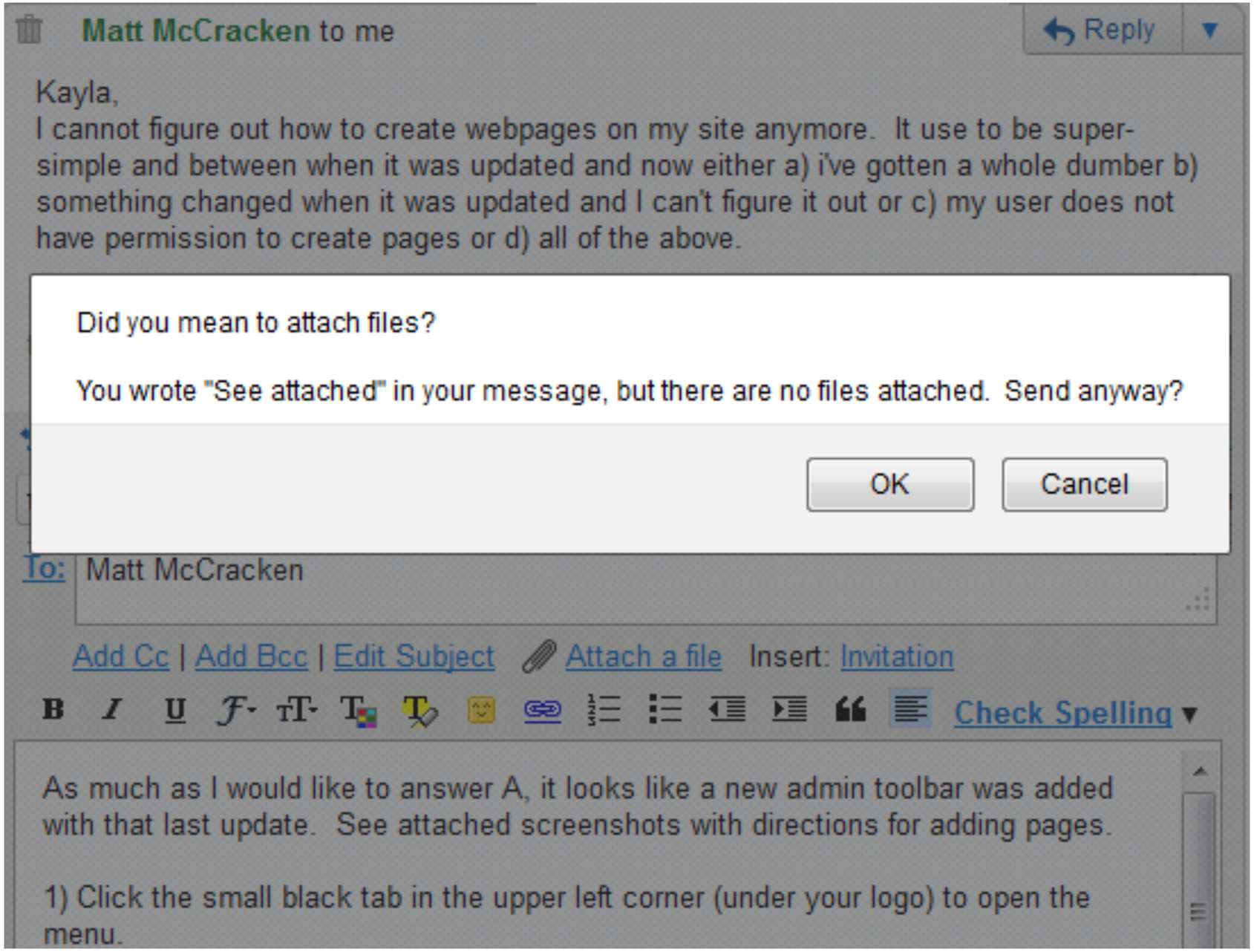
MS Excel

5) Error prevention

- Even better than good error messages is a careful design which prevents a problem 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.

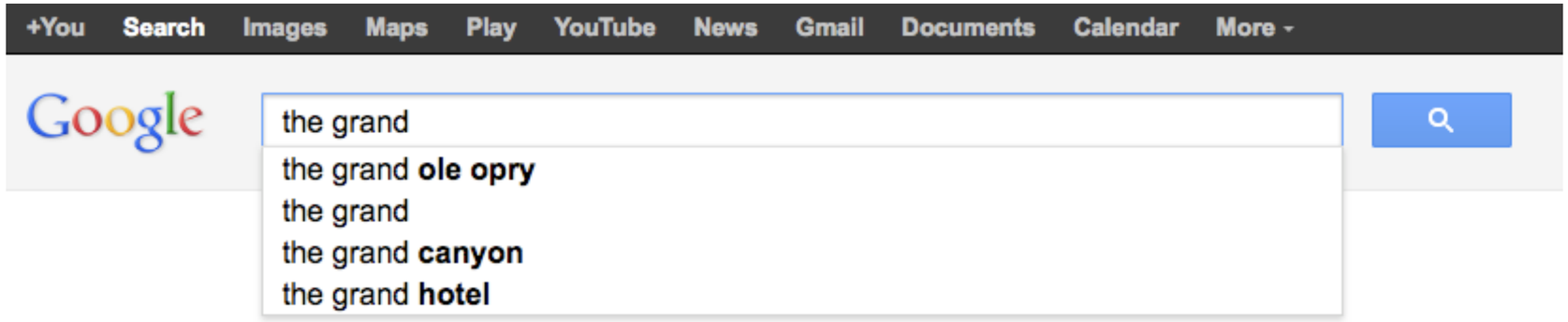
- displaying which fields are mandatory, form validation




Matt McCracken to me
Reply
Kayla,
I cannot figure out how to create webpages on my site anymore. It use to be super-simple and between when it was updated and now either a) i've gotten a whole dumber b) something changed when it was updated and I can't figure it out or c) my user does not have permission to create pages or d) all of the above.
Did you mean to attach files?
You wrote "See attached" in your message, but there are no files attached. Send anyway?
OK
Cancel
To:
Matt McCracken
Add Cc | Add Bcc | Edit Subject
Attach a file
Insert: Invitation
Check Spelling
As much as I would like to answer A, it looks like a new admin toolbar was added with that last update. See attached screenshots with directions for adding pages.
1) Click the small black tab in the upper left corner (under your logo) to open the menu.

6) Recognition rather than recall

- Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.



7) Flexibility and efficiency of use

- system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.
- Shortcut key

8) Aesthetic and minimalist design

- Dialogues should not contain information which is irrelevant or rarely needed

9) Help users recognize and recover from errors

- Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

10)Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation.

Information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

Conducting a Heuristic Evaluation

Three stages:

1) Briefing : introduce the system/prototype to the experts & tell them what to do

2) Evaluation : each expert evaluate the system/prototype independently & record potential usability problems.

3) Debriefing

- experts come together to discuss their findings.

- prioritized the problems found.

- suggest solutions.

Thank you