

ACSD

# *Evaluation Methods and Usability Labs*

# Why Evaluation?

- Finding out problems
- Checking for quality of task support
- Changing design

# Three main types of methods

- Testing methods

Representative users

work on typical tasks

using the system (or prototype)

evaluators check the outcome:

- How supportive is the interface?
- Usability problems?
- Other problems?

# Three main types of methods

- Inspection methods
  - Usability experts (sometimes other categories)
  - examine the application
  - for usability problems

# Three main types of methods

- Methods based on inquiries

Usability evaluators

interview the users for:

- likes,
- dislikes,
- needs,
- understanding of system.

Also observation studies (of real work)

# Usability testing methods

- Teaching Method
- Thinking Aloud Protocol
- Coaching Method
- Co-discovery Learning
- Performance Measurement
- Question-asking Protocol
- Remote Testing
- Retrospective Testing
- Shadowing Method

# Usability Inspection Methods

- Cognitive Walkthroughs
- Feature Inspection
- Heuristic Evaluation
- Pluralistic Walkthrough
- Perspective-based Inspection

# Usability Inquiry Methods

- Field Observation
- Focus Groups
- Interviews
- Logging Actual Use
- Proactive Field Study
- Questionnaires



# Usability Study Process

1. Plan test (tasks, scope, etc.)
2. Prepare materials (user profiles, prototype, instructions, forms, etc.)
3. Prepare location
4. Run a Pilot Test – Test the test
5. Recruit users based on your user profiles (advertise, select, schedule)
6. Conduct Test (briefing, user debriefing, questionnaires)
7. Analyze Results
8. Fix user interface and Retest

# Important parts of most tests

- Briefing, debriefing (why did we test?)
- Personal data (even for anonymous tests)
- Background data
  - can be used for categorizing, statistics

- [http://www.usabilitytestingcentral.com/moderation\\_tips/](http://www.usabilitytestingcentral.com/moderation_tips/)
- While conducting a usability test:
  1. Don't praise the subject.
  2. Don't prompt with "Like/dislike".
  3. Don't ask about "Easy to use".
  4. Don't ask about expectations.
  5. Don't give instructions.

# Wizard of Oz-testing

- Controlled experiment
- Testing non-existent technology
- Subject believes it is real
- Surprisingly simple method.

# Wizard of Oz

- Made big displays through "cheating"
- The experiments cheats – computer intelligence is replaced by human control
- Many uses for simulation of "intelligent" applications
  - We can test concept without prototype

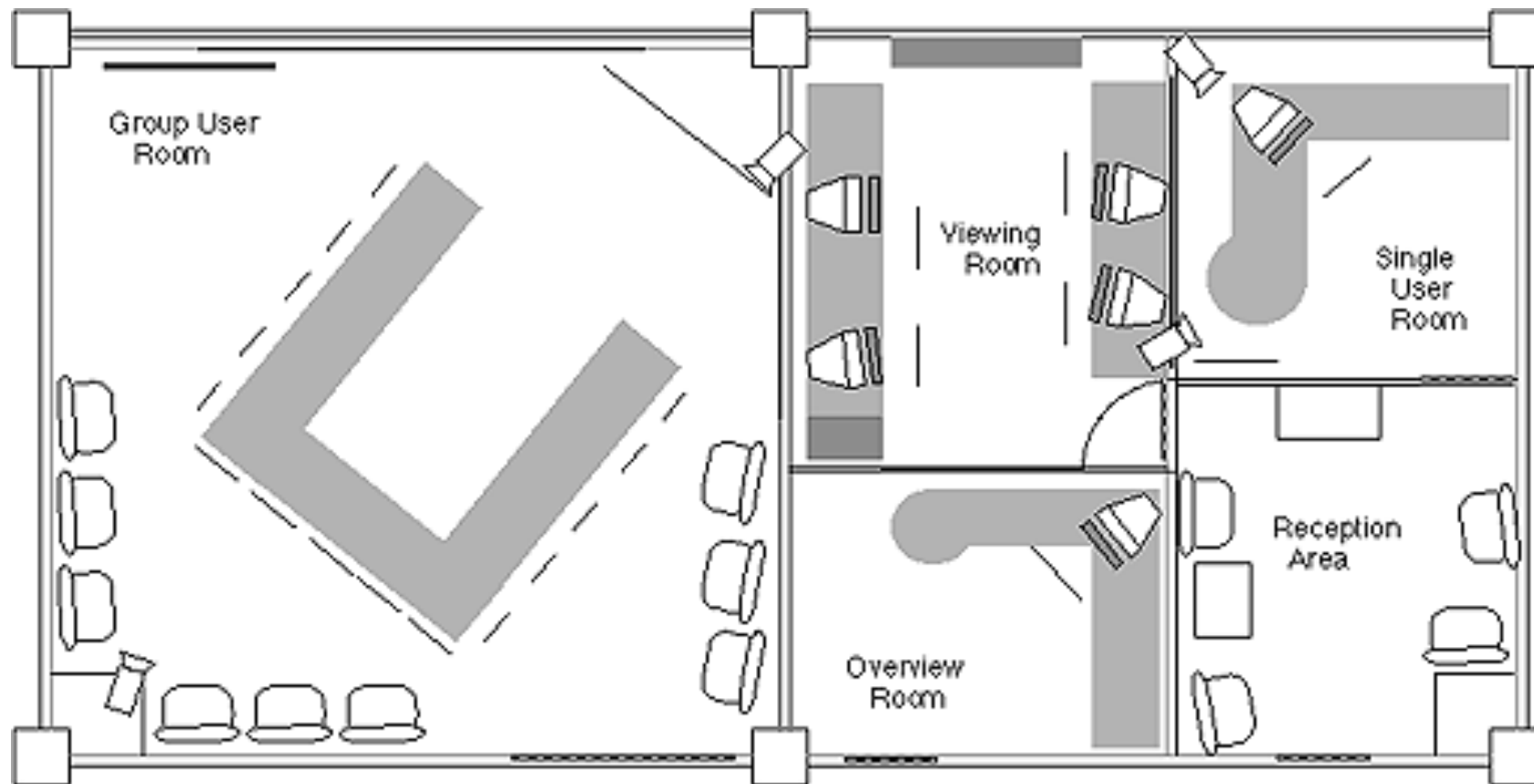
# Wizard of Oz studies

- Often performed in Usability labs
- Ghost operator is hidden behind one-way reflecting mirror
  - TV-cameras and audio recordings
- Operator monitors and responds to user activities
- Observer observes

# Usability Laboratories

- Artificial setting for conducting usability studies
- Technically advanced environments
- Mostly used for observation studies
  - Simulated or real applications

# Sample laboratory layout





# Test room



# Control room



# Advantages

- Controlled environments
- Good data recording facilities
- Large amounts of co-ordinated data
- Repeatable experiments
- Relatively easy to make variations in conditions

# Disadvantages

- Dependent on technology
- Expensive
- Artificial environment
- Unnatural conditions for the experiment
- Overkill?

# Working scene

- An alternative to Usability Lab
- A complete model of the work space (e.g., a bank office) is built for the testing purpose
- Real customers are enacting their tasks with real bank clerques
  - Environment is a copy of the real implementation
  - Good for testing secondary and tertiary users

# A bank office



# Working scenes

## Supplies

- contextual information
- realistic usage situations
- Real user problems

## Requires

- Massive effort
- Detail scenario planning
- Money

# Warming up the user

- Chit-chatting
- Joking (has to be from the heart, though)
- Pre-tests
- Informal interview



# Turing test

If the computer succeeds in the Turing test, it will be considered intelligent!

But what about a human that fails it?

# Purpose?

- It is important to ask the right questions!
- The wrong questions give bad answers.
- "Have you stopped beating your dog?"
  - What is the proper answer here? Yes or No?