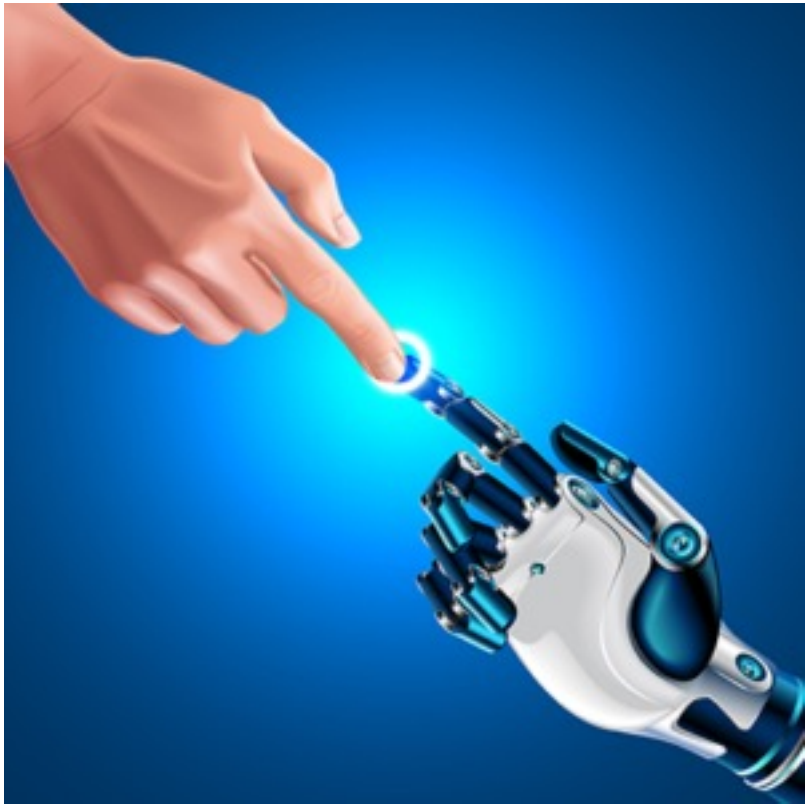
HUMAN COMPUTER INTERACTION

LECTURE 13



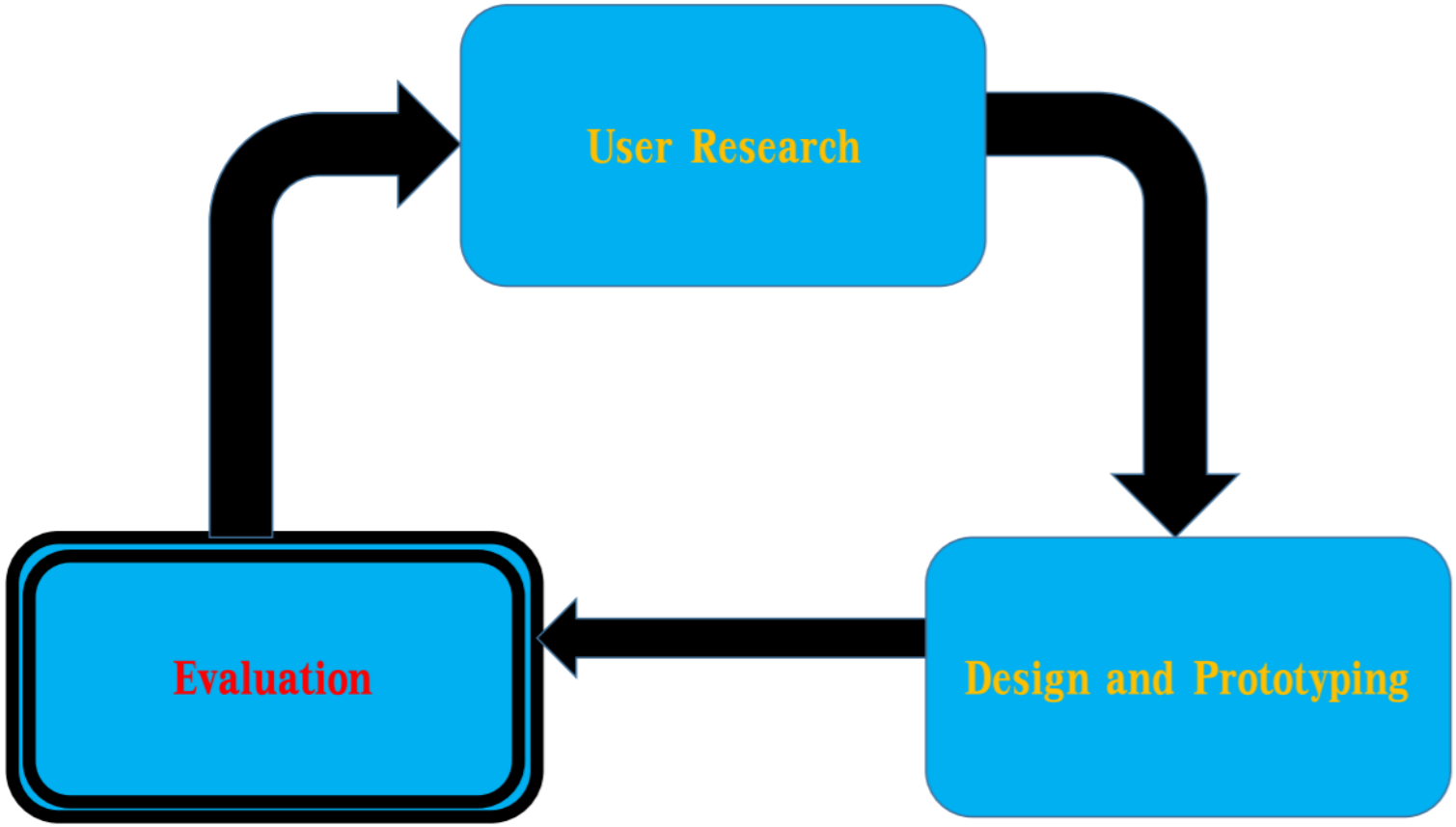
KASSYMOVA AIZHAN BAKHYTZHANOVNA,
PHD, ASSOCIATE PROFESSOR

A.KASSYMOVA@SATBAYEV.UNIVERSITY

LESSON PLAN

- **Evaluation with Users**

WHAT IS A DESIGN PROCESS?



KEY POINTS

- **Evaluation is part of an iterative process**
- **Design focus**
- **Set goals**
- **May occur multiple times…**
  - At different phases of the process
  - On different types of ‘interfaces’
  - Using different types methods

EVALUATION WITHOUT USERS

Surprising!

May be ‘cheaper’ – recruiting users can be difficult; user’s time is valuable

Systematic methods to step through an interface, looking for problems

Each method provides a “focus”

For example: does the interface satisfy a checklist of well-known principles of good design?

For example: step through key tasks, carefully considering whether a typical user will be able to complete each step of task

Cognitive walkthrough

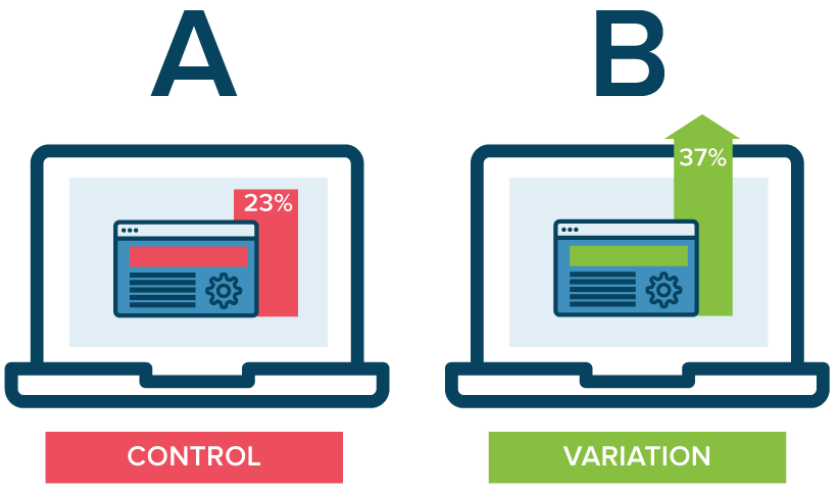
Heuristic Evaluation

EVALUATION WITH USERS

- Ethical issues… consent

- Qualitative usability studies
- Controlled lab studies
- Field studies
- Field experiments
- A/B testing

- *Preparation*
- *Think aloud*
- *Eye tracking*



EVALUATION WITH USERS

Note that user testing is testing the technology, not testing the users!

YOU WILL LEARN:

- **Two broad approaches – formative and summative**
- **Different methods**
  - Usability lab studies
  - Field studies, Alpha release, A/B testing
  - Field controlled experiments
  - Eye-tracking
  - Log analysis in evaluation
- **Ethics in user testing**

USER TESTING GOALS

Formative & Summative Evaluation

Created by Scott Lewis
from Noun Project

THE BIG PICTURE

- Why are you conducting the test?
- What are you going to learn?
- What will the results be used for?
- What kind of claims do you want to make?

TWO BROAD APPROACHES

Kind of learning	Formative	Summative
Goals	Exploration	Evaluation
Type of data	Qualitative	Quantitative
Level of control	Less	More
Formality	Generally Less	Generally more
Phase	Design/Prototype	Testing
Cost	Often cheaper	Often $$$
User tasks	Relatively open	Assigned

DIFFERENT GOALS, LEAD TO DIFFERENT METHODS

- **Controlled (laboratory) experiments**
- **Field experiments**
- **Field studies**
- **Qualitative usability studies**
  - Think aloud method

SUMMATIVE: WHAT ARE YOU TRYING TO LEARN?

- **Concrete, quantitative measures of usability**
  - Time to learn a feature
  - Use time for specific tasks
  - Features used (or not)
  - Error rates
  - Measures of user satisfaction
  - Comparison to prior/alternative versions, competitors
- ***Results***

FORMATIVE: WHAT ARE YOU TRYING TO LEARN?

- **Qualitative experiences of usability**
  - What will they use this thing for anyway?
  - Trouble spots in completing tasks
  - Features found / not found
  - Reactions to design elements/decisions
  - Learning users' mental models
  - Why can't those silly users do it?
- **Guidance**

TWO BROAD APPROACHES

Kind of learning	Formative	Summative
Goals	Exploration	Evaluation
Type of data	Qualitative	Quantitative
Level of control	Less	More
Formality	Generally Less	Generally more
Phase	Design/Prototype	Testing
Cost	Often cheaper	Often $$$
User tasks	Relatively open	Assigned

BEST OF BOTH WORLDS

- Combine elements of both, at times
- Keep an eye on the final goals

Video: Usability lab tour

Video: Usability Example 1

Video: Usability Example 2

DRAFTING A USER TEST PLAN

What do you hope to learn?

	How can we make our UI better?	Does our UI work well?
Goals	Exploration	Evaluation
Type of data	Qualitative	Quantitative
Level of control	Less	More
Formality	Generally Less	Generally more
Phase	Design/Prototype	Testing
User tasks	Relatively open	Assigned

WHAT DO YOU HOPE TO LEARN

	How can we make our UI better?	Does our UI work well?
Goals	Exploration	Evaluation
Type of data	Qualitative	Quantitative
Level of control	Less	More
Formality	Generally Less	Generally more
Phase	Design/Prototype	Testing
User tasks	Relatively open	Assigned

USABILITY TESTING STEPS

1. **Plan ahead!**
2. **While in the lab:**
   - Explain the test and get consent
   - Provide instructions
   - Take notes
   - Know when to intervene
   - Debrief with the participant
3. **Debrief with the team, consider next steps**

WHY DEVELOP A USER TEST PLAN?

- Consistency between sessions
- Manage your time to get to everything
- Anticipate and prepare for problems
- Lets you practice and refine
- Know what you're measuring
- Know what "success" means

TO PLAN: SELECT & DOCUMENT…

1. User & setting
2. Methods & metrics for your goals
3. Tasks, prompts, etc.
4. Researcher roles

SELECT: USERS & SETTING

- **Decide: lab or field?**
- **Recruit representative users**
  - May run fewer in formative testing (e.g., 5-7 users)
  - In summative, conduct a power analysis. Recruit to get statistical significance if the effect is there
  - What info do you need to know about users (e.g., demographics, baseline skills, etc.)?

SELECT: METHODS & METRICS

- **In the lab:**
  - Experiments (comparing multiple alternatives)
  - Think aloud qualitative usability studies

- **In the field:**
  - Experiments (comparing multiple alternatives)
  - Mixed-methods field studies

SELECT: METHODS & METRICS

- **Concrete, quantitative measures of usability**
  - Time to learn a feature
  - Use time for specific tasks
  - Features used (or not)
  - Error rates
  - Measures of user satisfaction
  - Comparison to prior/alternative versions

- **Qualitative experiences of usability**
  - Trouble spots in completing tasks
  - Features found / not found
  - Reactions to design elements/decisions
  - Learning user's mental models
  - Answers to the *"why?"* questions

SELECT: TASKS & PROMPTS

- **What instructions will you give?**
- **Tasks vs. play (exploration)**
- **What tasks should you choose?**
  - Frequent, difficult, uncertain
- **How long can tasks be?**
  - Recruitment, compensation
- **When is the task over?**

TO PLAN: SELECT & DOCUMENT…

1. Users & setting
2. Methods & metrics for your goals
3. Tasks, prompts, etc.

Make sure these are consistent with your goals!

SELECT: RESEARCH ROLES

- Who will greet, get consent, facilitate, and debrief?
- Who will observe, collect data (and which data)?

ALSO PLAN & PREPARE…

- Equipment (e.g., recording)
- Instruments (e.g., questionnaires, structured note sheets)

END OF LECTURE