UNIVERSITY OF
PLYMOUTH

COMP2000: Software engineering 2

Introduction to evaluation

Outline

- Re-visit the design process
- Introduction to evaluation
- Evaluation paradigms
- Overview of User testing

Design products

- Designing usable interactive products requires considering:
    - who is going to be using them
    - where they are going to be used.

- Another key concern is understanding the kind of activities people are doing when interacting with the products.

The process of the design involves four basic activities:

- 1. Establishing requirements
- 2. Designing alternatives
- 3. Prototyping
- 4. Evaluating

Evaluation

- Designing useful and attractive products requires skill and creativity.
- As products evolve from initial ideas through conceptual design and prototypes, iterative cycles of design and evaluation help to ensure that they meet users' needs.

What, why, and when to evaluate

- Users want systems that are easy to learn and to use as well as effective, efficient, safe, and satisfying. Being entertaining, attractive, and challenging, etc. is also essential for some products.
- So, knowing what to evaluate, why it is important, and when to evaluate are key skills for interaction designers.

- What to evaluate
- A variety of features
- Some features, such as the sequence of links to be followed to find an item on a website, are often best evaluated in a laboratory.
- Other aspects, such as whether a collaborative toy is robust and whether children enjoy interacting with it, are better evaluated in natural settings.

- Why to evaluate
- Evaluation is needed to check that users can use the product and like it

- When to evaluate
- Evaluation could be done during or after the design.
- Evaluations done during design to check that the product continues to meet users' needs are know as formative evaluations.
- Evaluations that are done to assess the success of a finished product, such as those to satisfy a sponsoring agency or to check that a standard is being upheld, are know as summative evaluation.

Evaluation paradigms

Preece, Rogers and Sharp propose the following evaluation paradigms:

- "quick and dirty" evaluations;
- usability testing
- field studies; and
- predictive evaluation.

- A "quick and dirty" evaluation is a common practice in which designers informally get feedback from users or consultants to confirm that their ideas are in line with users' needs and are liked.
- "Quick and dirty" evaluations can be done at any stage and the emphasis is on fast input rather than carefully documented findings.

- Usability testing involves measuring typical users' performance on carefully prepared tasks that are typical of those for which the system was designed.
- As the users perform these tasks, they are watched and recorded on video and by logging their interactions with software.

- Field studies are done in natural settings with the aim of increasing understanding about what users do naturally and how technology impacts them.

- In predictive evaluations experts apply their knowledge of typical users, often guided by heuristics, to predict usability problems. Another approach involves theoretically based models.
- The key feature of predictive evaluation is that users need not be present, which makes the process quick, relatively inexpensive, and thus attractive to companies;

User testing

- A central aspect of interaction design is user testing.

- User testing refers to a technique used in the design process to evaluate a product, feature or prototype with real users.

- User testing involves measuring the performance of typical users doing typical tasks in controlled laboratory-like conditions.
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- Its goal is to obtain objective performance data to show how usable a system or product is in terms of usability goals, such as ease of use or learnability.

• User testing is an applied form of experimentation used by developers to test whether the product they develop is usable by the intended user population to achieve their tasks (Dumas and Redish, 1999).

• User testing falls in the usability testing paradigm and sometimes the term "user testing" is used synonymously with usability testing.

• It involves recording data using a combination of video and interaction logging, user satisfaction questionnaires, and interviews.

Why user testing?

Use the chat facility

Why user testing?

- There are several reasons why you might want to undergo usability testing, the most common is that it allows the design team to identify friction in a user experience they are designing, so that it can be addressed before being built or deployed.
- Identifying any issues early reduces the longer term cost.

General steps

Know what you’re making

Create your tasks

Create your paper-based prototypes

Recruit users

Conduct your tests

Look for trends in the data

Make sense of your data

Consent form

- Permission

CONSENT FORM

[Interview]

Investigating how mobile learning service could be developed to enhance learning from cultural heritage sites.

Researcher:

Email:

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason.

I agree to participate in this study and to the use of quotes in publications.

_____	_____	_____
Name of Participant	**Date**	**Signature**
_____	_____	_____
Name of Researcher	**Date**	**Signature**

- Test plan: different role has different tasks

- Example:
- Admin
- Users

Prepare your test plan

- **Test plan could look like the following:**

Test Plan Name

Scenario Name

- **Goals** - what you want to learn from the test scenario
- **Quantitative measurement list** - what measurements the loggers will record
- **Scenario** - the actual story (By itself, on a separate sheet of paper)
- **Task list** - short description of the actual tasks the user should perform
- **Qualitative measurement list**
- **Potential observations of users**
- **Post Scenario interview or questionnaire questions** (By itself, on a separate sheet of paper)
- **Test set up details**

- **The general procedure for the usability tests session:**

1. **Prepare test room**: make sure the programs and equipment work, and you have the forms and questions.
2. **Greet the Guest**: introduce your self and the other members of the team. Briefly describe what will happen and give the consent form. Describe what is on the consent form so the participant does not have to read the form if they do not want to.
3. **Pre test questions**: includes demographics. This should be a separate piece of paper.
4. **Explain interface**: or any other equipment.
5. **Tell the scenario**: And any other specific instructions, such as tasks to be performed. This should be on a separate piece of paper. The participant should not see the whole test plan.

5. Post scenario questionnaire: or interview

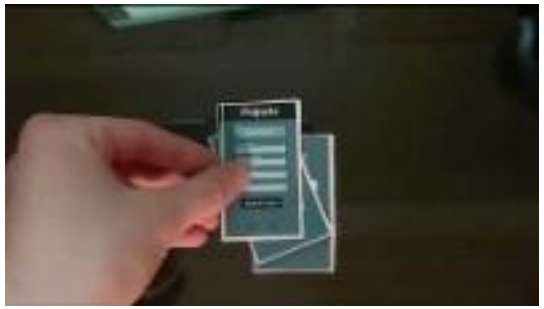
6. **Repeat**: steps 4-6 for each scenario

7. Post test questionnaire: This should be on a separate piece of paper.

9. Thank the participant

10. Organize the files

Examples of user testing using paper-based



https://www.youtube.com/watch?v=PHBNzKMG7o0

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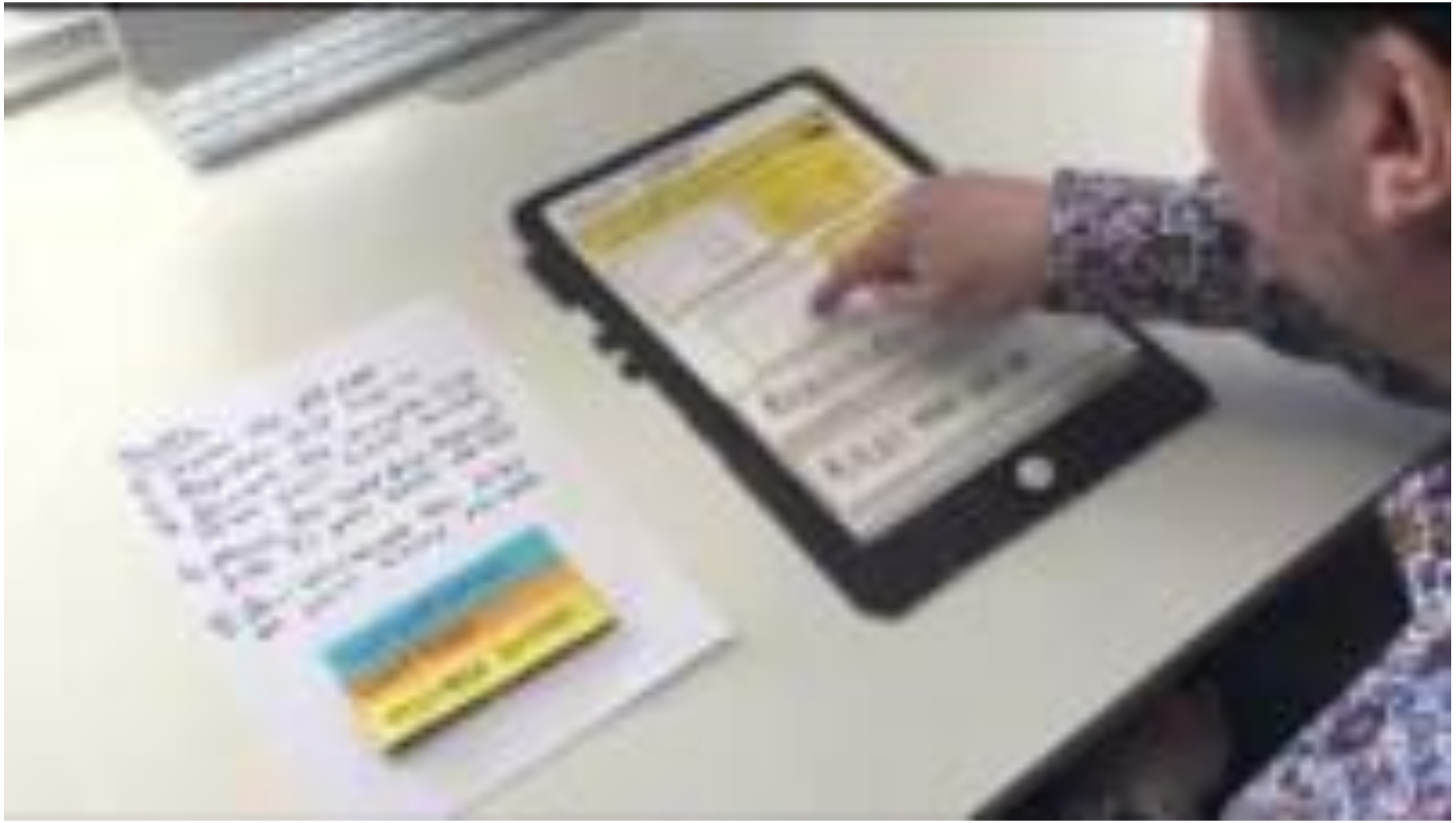

https://www.youtube.com/watch?v=yafaGNFu8Eg

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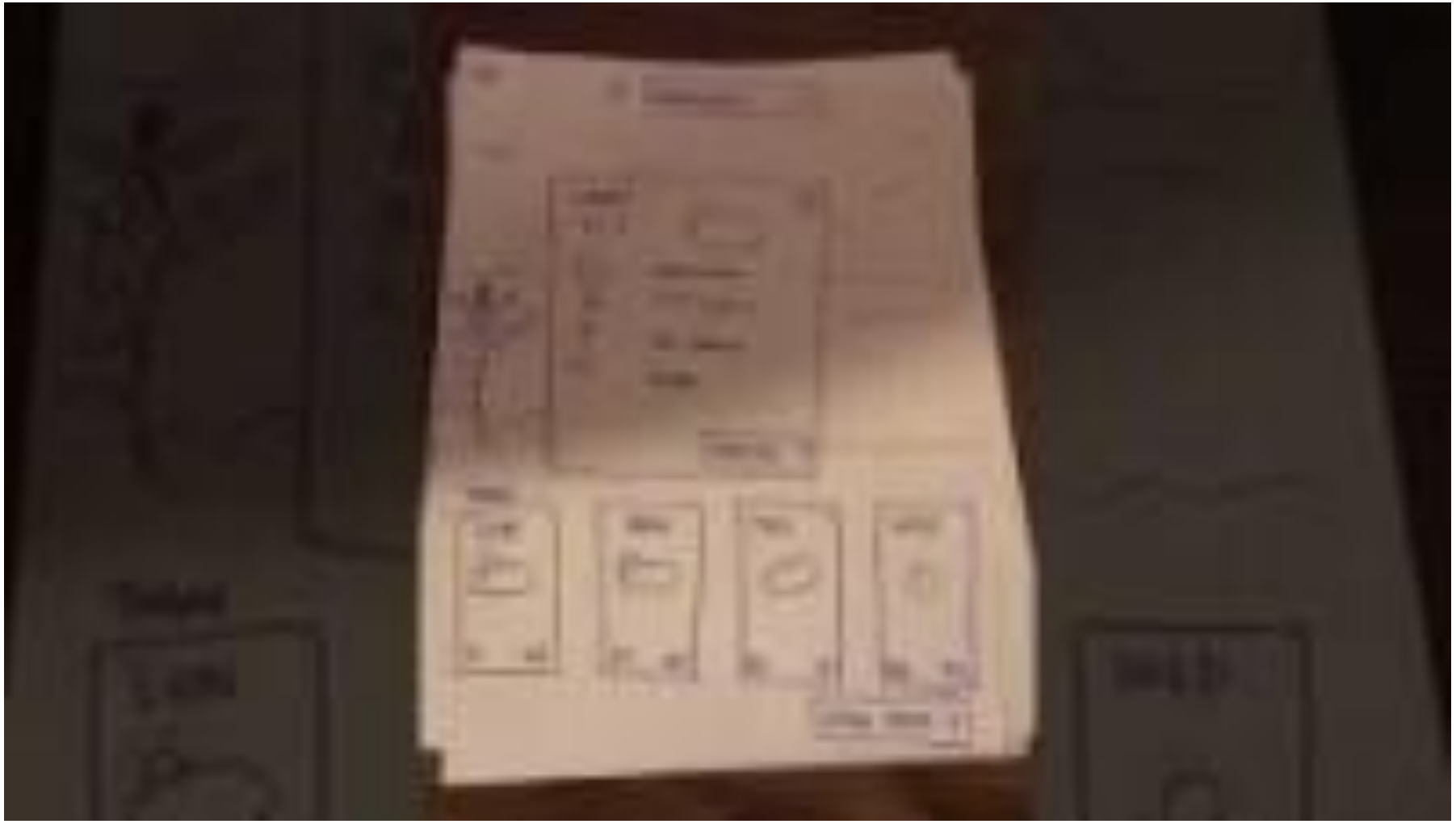

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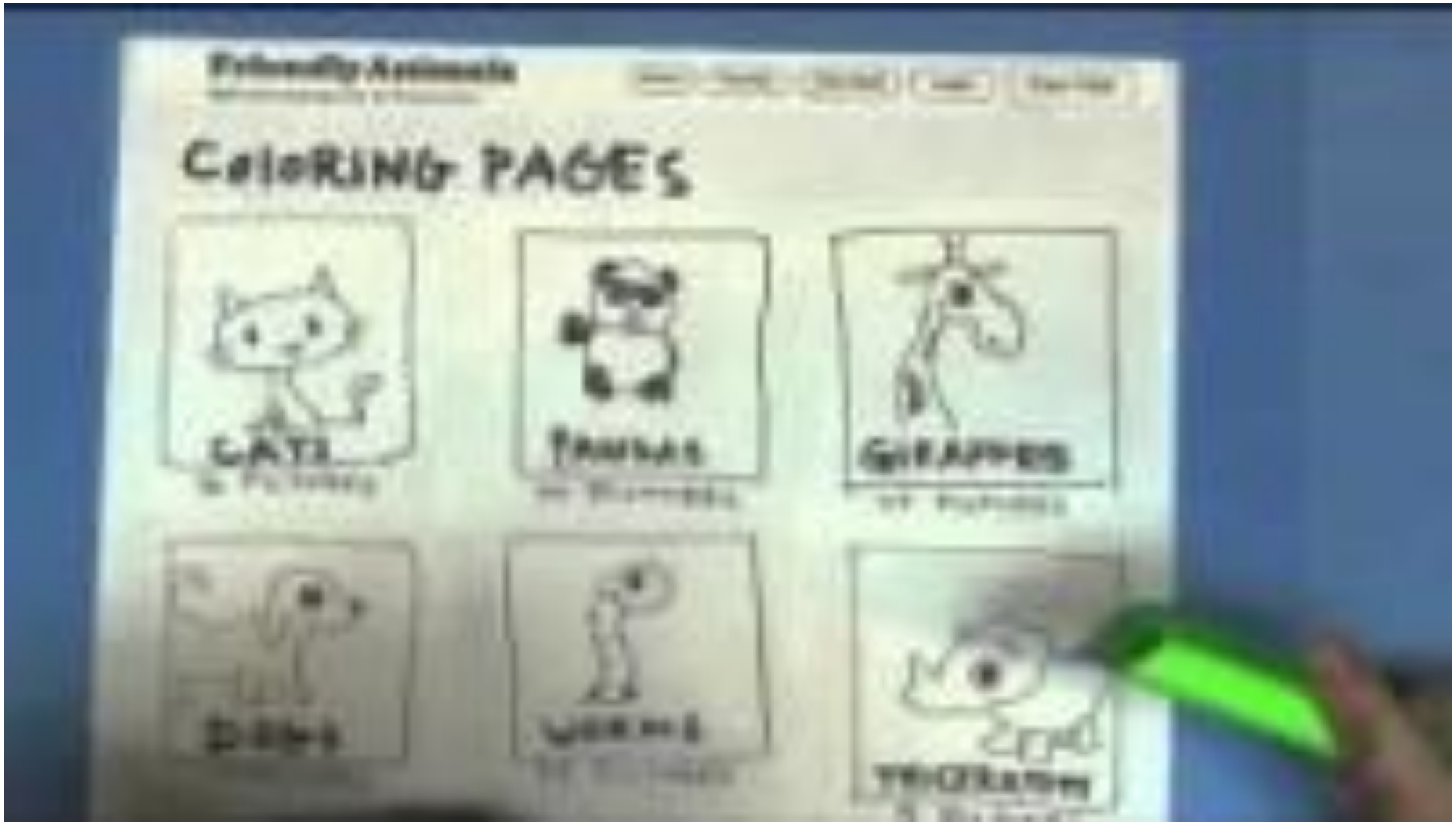

https://www.youtube.com/watch?v=dNbh21-G_cQ

Resources

• Sharp, Helen; Rogers, Yvonne and Preece, Jenny (2019). Interaction Design: Beyond Human-Computer Interaction.

Thank you