UX Goals and Metrics

Tullis
Chapter 3.

PLANNING

INTRODUCTION

- What are the goals of your usability study?
  - Are you trying to ensure optimal usability for a new piece of functionality?
  - Are you benchmarking the user experience for an existing product?
- What are the goals of users?
  - Do users complete a task and then stop using the product?
  - Do users use the product numerous times on a daily basis
- What is the appropriate evaluation method?
  - How many participants are needed to get reliable feedback?
  - How will collecting metric impact the timeline and budget?
  - How will the data be collected and analyzed?

STUDY GOALS

- How will the data be used within the product development lifecycle?
- Two general ways to use data
  - Formative
  - Summative

STUDY GOALS

FORMATIVE

SUMMATIVE

STUDY GOALS

educlash
Just Another Way To Learn

FORMATIVE

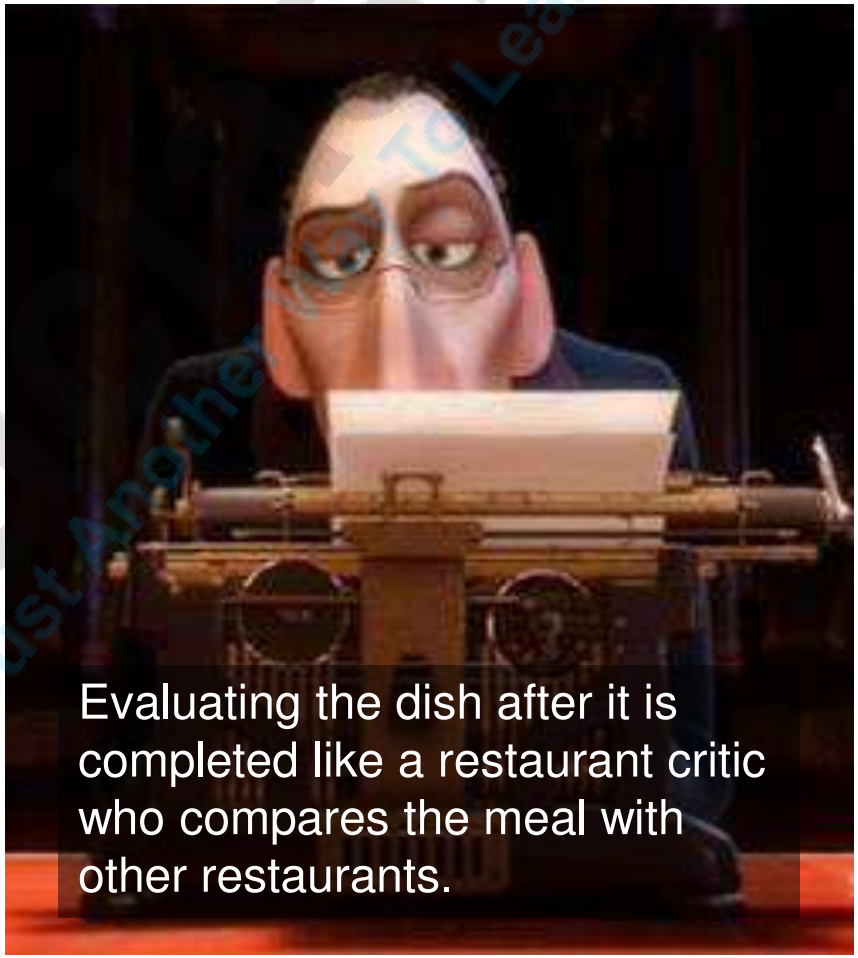
SUMMATIVE

STUDY GOALS

- Formative Usability
  - Evaluates product or design, identifies shortcomings, makes recommendations
  - Repeats process
- Attributes
  - Iterative nature of testing with the goal of improving the design
  - Done before the design has been finalized
- Key Questions
  - What are the most significant usability issues that are preventing users from completing their goals or that are resulting in inefficiencies?
  - What aspects of the product work well for users? What do they find frustrating?
  - What are the most common errors or mistakes users are making?
  - Are improvements being made from one design iteration to the next?
  - What usability issues can you expect for remain after the product is launched?

STUDY GOALS

- Summative Usability
  - Goal is to evaluate how well a product or piece of functionality meets its objectives
  - Comparing several products to each other
  - Focus on evaluating again a certain set of criteria
- Key Questions
  - Did we meet the usability goals of the project?
  - How does our product compare against the competition?
  - Have we made improvements from one product release to the next?



USER GOALS

- Need to know about users and what they are trying to accomplish
  - Forced to use product everyday as part of their jobs?
  - Likely to use product only one or twice?
  - Is product a source of entertainment?
  - Does user care about design aesthetic?

- Simplifies to two main aspects of the user experience
  - Performance
  - Satisfaction

USER GOALS

- Performance
  - What the user does in interacting with the product
- Metrics (more in Ch 4)
  - Degree of success in accomplishing a task or set of tasks
  - Time to perform each task
  - Amount of effort to perform task
    - Number of mouse clicks
    - Cognitive effort
- Important in products that users don't have choice in how they are used
  - If user can't successfully complete key tasks, it will fail

USER GOALS

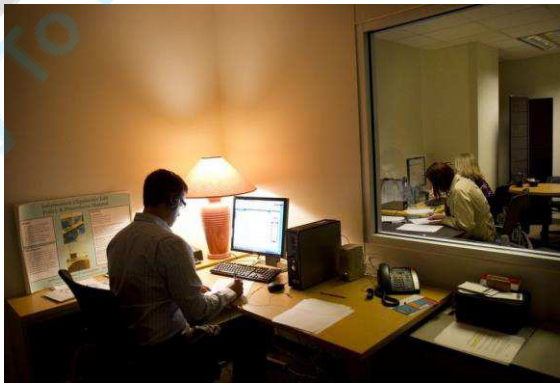
- Satisfaction
  - What users says or thinks about their interaction
- Metrics (more in Ch 6)
  - Ease of use
  - Exceed expectations
  - Visually appealing
  - Trustworthy
- Important in products that users have choice in usage

STUDY DETAILS

- Budgets and Timelines
  - Difficult to provide cost or time estimates for a any particular type of study
- General rules of thumb
  - Formative study
    - Small number of participants (≤10)
    - Little impact
  - Lab setting with larger number of participants (>12)
    - Most significant cost – recruiting and compensating participants
    - Time required to run tests
    - Additional cost for usability specialists
    - Time to clean up and analyze data
  - Online study
    - Half of the time is spent setting up the study
    - Running online study requires little if any time for usability specialist
    - Other half of time spent cleaning up and analyzing data
    - 100-200 person-hours (50% variation)

STUDY DETAILS

- Evaluation Methods
  - Not restricted to certain type of method (lab test vs. online test)
  - Choosing method based on how many participants and what metrics you want to use
- Lab test with small number of participants
  - One-on-one session between moderator and participant
  - Participant thinking-aloud, moderator notes participant behavior and responses to questions
  - Metrics to collect
    - Issue based metrics – issue frequency, type, severity
    - Performance metrics – task success, errors, efficient
    - Self-reported metrics – answer questions regarding each task at the end of study
- Caution
  - Easy to over generalize performance and self-reported metrics without adequate sample size



STUDY DETAILS

- Evaluation Methods (continued)
- Lab test with larger number of participants
  - Able to collect wider range of data because increased sample size means increased confidence in data
    - All performance, self-reported, and physiological metrics are fair game
  - Caution
    - Inferring website traffic patterns from usability lab data is not very reliable
    - Looking at how subtle design changes impact user experience
- Online studies
  - Testing with many participants at the same time
  - Excellent way to collect a lot of data in a short time
  - Able to collect many performance, self reported metrics, subtle design changes
  - Caution
    - Difficult to collect issue-based data, can't directly observe participants
    - Good for software or website testing, difficult to test consumer electronics

STUDY DETAILS

- Participants
  - Have major impact in findings
- Recruiting issues
  - Identifying the recruiting criteria to determine if participant eligible for study
    - How to segment users
  - How many users are needed
    - Diversity of user population
    - Complexity of product
    - Specific goals of study
  - Recruiting strategy
    - Generate list from customer data
    - Send requests via email distribution lists
    - Third party
    - Posting announcement on website

STUDY DETAILS

- Data Collection
  - Plan how you are capturing data needed for study
  - Significant impact on how much work later when analysis begins
- Lab test with small number of participants
  - Excel works well
  - Have template in place for quickly capturing data during testing
  - Data entered in numeric format as much as possible
    - 1 – success
    - 0 – failure
  - Everyone should know coding scheme extremely well
    - Someone flips scales or doesn't understand what to enter
    - Throw out data or have to recode data
- Larger studies
  - Use data capture tool
  - Helpful to have option to download raw data into excel

STUDY DETAILS

- Data Cleanup
  - Rarely in a format that is instantly ready to analyze
  - Can take anywhere from one hour to a couple of weeks
- Cleanup tasks
  - Filtering data
    - Check for extreme values (task completion times)
    - Some participants leave in the middle of study, and times are unusually large
    - Impossible short times may indicate user not truly engaged in study
    - Results from users who are not in target population
  - Creating new variables
    - Building on raw data useful
    - May create a top-2-box variable for self-reported scales
    - Aggregate overall success average representing all tasks
    - Create an overall usability score

STUDY DETAILS

- Cleanup tasks (continued)
  - Verifying responses
    - Notice large percentage of participants giving the same wrong answer
    - Check why this happens
  - Checking consistency
    - Make sure data capture properly
    - Check task completion times and success to self reported metrics (completed fast but low rating)
      - Data captured incorrectly
      - Participant confused the scales of the question
  - Transferring data
    - Capture and clean up data in Excel, then use another program to run statistics, then move to Excel to create charts and graphs

SUMMARY

- Formative vs. summative approach
  - Formative – collecting data to help improve design before it is launched or released
  - Summative – want to measure the extend to which certain target goal were achieved
- Deciding on the most appropriate metrics, take into account two main aspect of user experiences – performance and satisfaction
  - Performance metrics – characterize what the user does
  - Satisfaction metrics - relate to what users think or feel about their experience
- Budgets and timelines need to be planned well out in advance when running any usability study
- Three general types of evaluation methods used to collect usability data
  - Lab tests with small number of participants
    - Best for formative testing
  - Lab test with large number of participants (>12)
    - Best for capturing a combination of qualitative and quantitative data
  - Online studies with very large number of participants (>100)
    - Best to examine subtle design changes and preferences

SUMMARY

- Clearly identify criteria for recruiting participants
  - Truly representative of target group
  - Formative
    - 6 to 8 users for each iteration is enough
    - If distinct groups, helpful to have four from each group
  - Summative
    - 50 to 100 representative users
- Plan how you are going to capture all the data needed
  - Template for quickly capturing data during test
  - Everyone familiar with coding conventions
- Data cleanup
  - Manipulating data in a way to make them usable and reliable
  - Filtering removes extreme values or records that are problematic
  - Consistency checks and verifying responses make sure participant intensions map to their responses