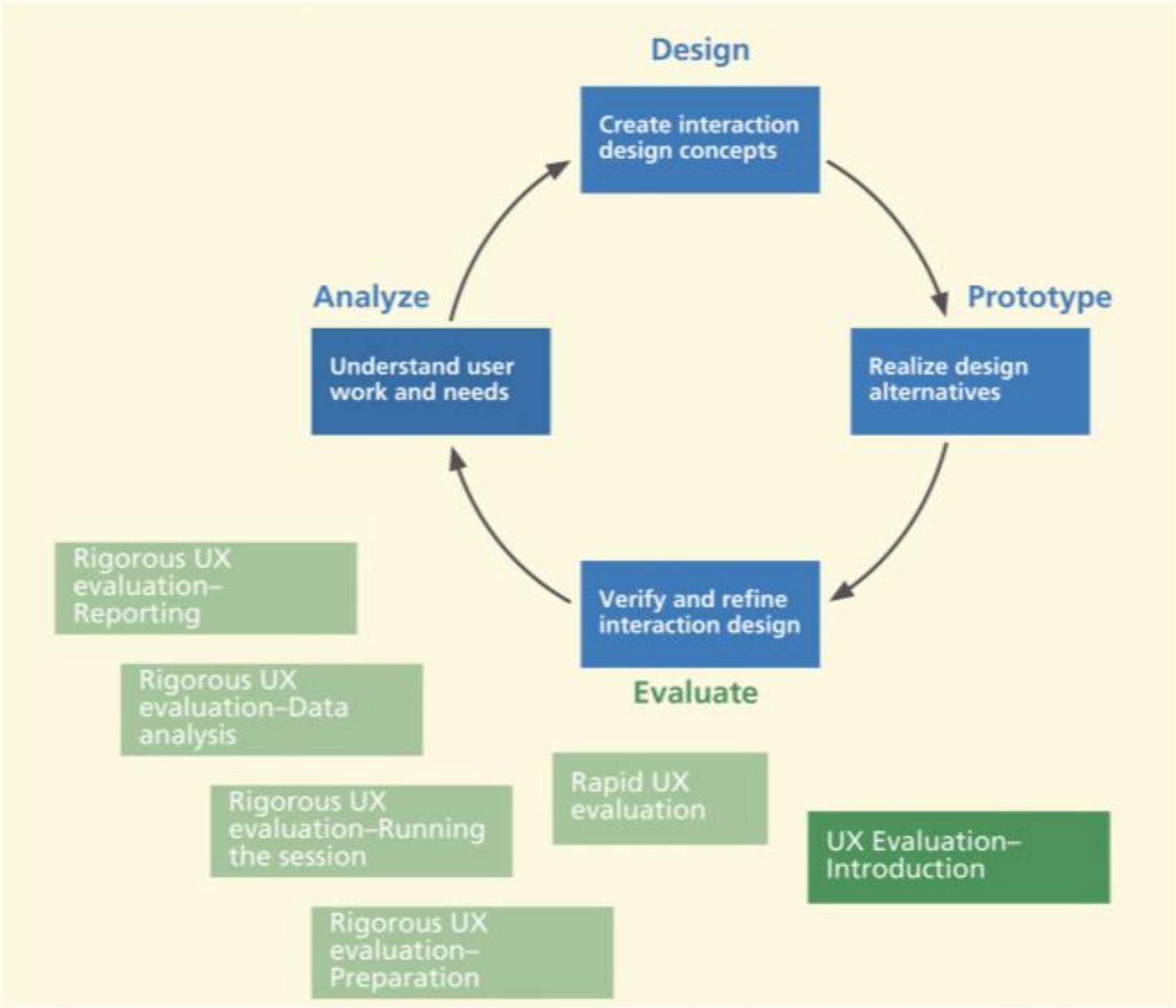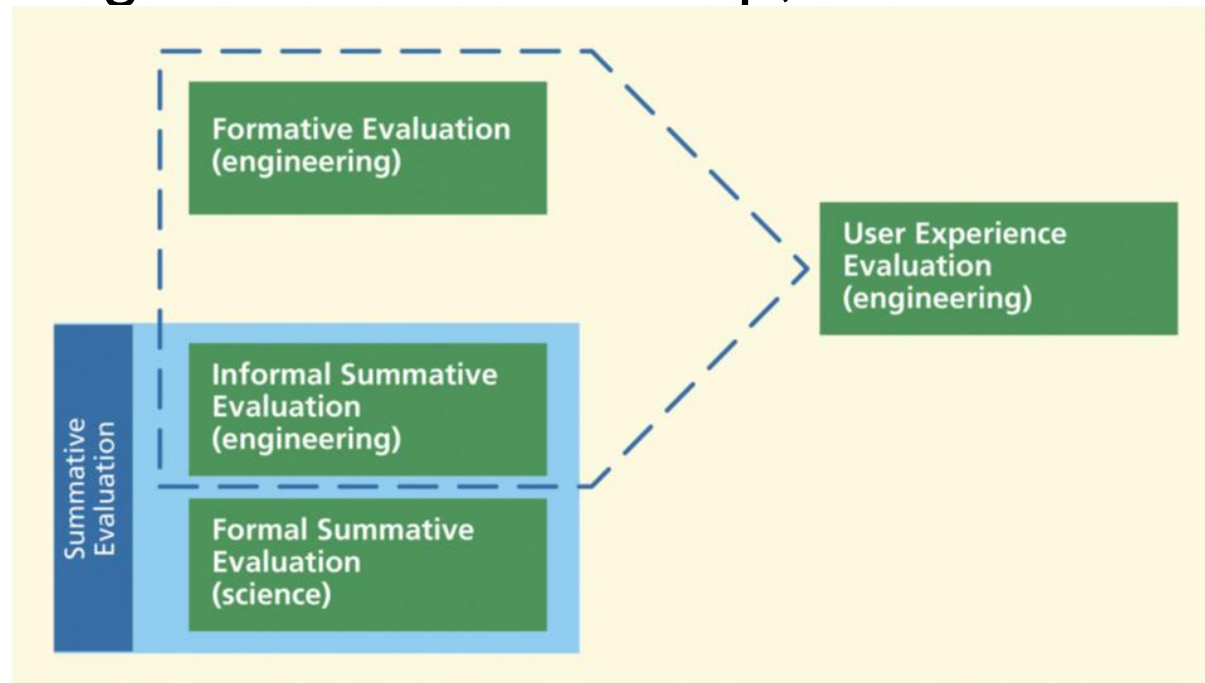# UX Evaluation

## SWEN-444

Selected material from *The UX Book*, Hartson & Pyla

# UX Evaluation: Formative plus Informal Summative

- Formative evaluation helps you *form* design
- Summative evaluation helps you *sum* up design
- "When the cook tastes the soup, that's formative"
- "When the guests taste the soup, that's summative"

# Formative UX Evaluation

- Goal is to identify UX problems and their causes **early in design**
- **Rapid** evaluation – less formal, fast , less cost
  - Inspections and walkthroughs
  - Heuristic evaluation
- **Design diagnostic** evaluation, evaluate design attributes
- Collects only **qualitative** data (subjective)
- Risk – "good enough" but not perfect

# Summative UX Evaluation

- Goal - assess the **usability quality** of the interface
  - Improve the UX through re-design as necessary
- **Late** in the life cycle ("beta")
- **Rigorous** evaluation – more formal, planned repeatable process ("user testing")
  - Preparation, data collection, analysis, and reporting
  - Empirical – observe users, collect quantitative (and qualitative) performance data in the lab or field
  - Evaluate user performance against UX goals

# Data Collection Techniques

- **Critical incident** identification - an event observed within task performance that is …
  - Significant indicator of UX problem
  - Due to effects of design or requirements defects on user
  - Errors but also other cues such as user hesitation or frustration
- **Direct measurement** of data; e.g., time to perform a task
- **Questionnaires** – collect subjective data from users post evaluation
  - Especially good for emotional impact, perceived usefulness
  - Use Likert scale for best results
- **Direct observation**
  - Encourage "thinking–aloud" – the user verbalizes their thoughts during the interactive experience
    - Easy to do but unnatural

# The System Usability Scale

- Widely used, in the public domain; uses Likert scale (1-5)

  1. I think that I would like to use this system frequently
  2. I found the system unnecessarily complex
  3. I thought the system was easy to use
  4. I would need technical support to be able to use this system
  5. I found functions in this system integrated
  6. Too much inconsistency in this system
  7. Most people would learn to use this system very quickly
  8. I found system very cumbersome to use
  9. I felt very confident using the system
  10. I needed to learn a lot of things before I could get going

# Evaluating Emotional Impact

- "Emotion is a **multifaceted** phenomenon"
  - Expressed through feelings
  - Verbal and non-verbal languages
  - Facial expressions and other behaviors
- Emotional impact can be "**measured**" **indirectly** in terms of its indicators
  - Self-reported via **verbal** techniques
  - Physiological response **observation**, e.g., facial expressions, body language
  - Physiological response **measurement**, e.g., biometrics
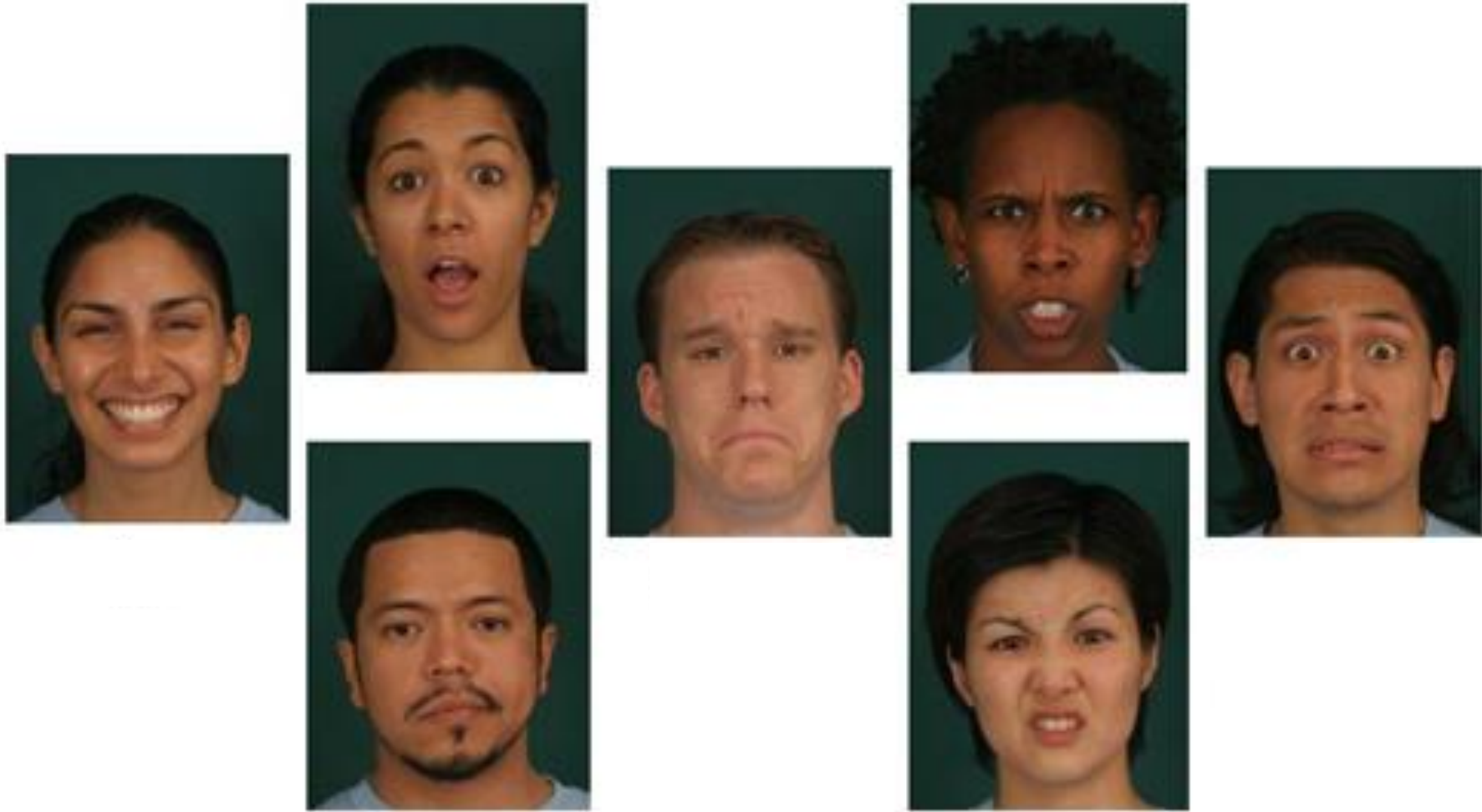
(c) David Matsumoto 2008

Surprise  Anger

Joy  Sadness  Fear

Contempt  Disgust

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Software Engineering
Rochester Institute
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