Human-Computer Interaction (HCI)

- Essentially, the study of the human use of technologies for the purpose of understanding and design.
HCI Areas

- Computer-Supported Collaborative Work (CSCW)
- Virtual & augmented reality/3D user interfaces
- Visual analytics/Information visualization
- Universal access
- Mobile design
- Design for special populations (children, elderly, etc.)
- Game design/studies
- User Customization
- Tangible computing, Physical computing, Ubiquitous computing, Social computing, Affective computing, ...X computing...
- ...
- ...
HCI Associated Terms

- Interaction design
- User interface design
- User experience (UX)
- Human-centered computing/design
- Visual design
- User research
- Experience design
- Usability engineering
- Human factors
- Information design
- Cyber-human systems
IxD

Interaction Design
Beyond human-computer interaction
3rd Edition

Area of practice

HCI

Human–Computer Interaction
Third Edition

Academic area of study
IxD  |  HCI
---|---
RESEARCH  |  RESEARCH
IxD

RESEARCH

Market Research
Design Research

HCI

RESEARCH

Academic Research
Design Research
<table>
<thead>
<tr>
<th>IxD</th>
<th>HCI</th>
</tr>
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<tbody>
<tr>
<td><strong>RESEARCH</strong></td>
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</tr>
<tr>
<td>Art/Craft</td>
<td>Science</td>
</tr>
</tbody>
</table>
Science + Design in HCI

The HCI Science-Design conundrum

- How do we do science through design?
- Or design through science?
Design Research

**HCI**

Design-oriented Research (DoR)

Design and technology implementations serve to test and validate particular research concepts

→ Focus is on the research concept to investigate

**IxD**

Research-oriented Design (RoD)

Use of research to help in solving design problems and real-world obstacles

→ Focus is on the design of an entity

Fallman (2007)
Design Research

Design-oriented research (DoR)

Concept

Technology (Design/Development)

Enhanced Concept

Research-oriented Design (RoD)

Concept

Research

Artifact (Design/Development)
Design Research

Design-oriented research (DoR)

- Concept
- Technology (Design/Development)
- Enhanced Concept

Research-oriented Design (RoD)

- Concept
- Artifact (Design/Development)
Design Research

Design-oriented research (DoR)

- Concept
- Research
- Technology (Design/Development)
- Tested Artifact

Research-oriented Design (RoD)

- Concept
- Research
- Artifact (Design/Development)
Design Research

Design-oriented research (DoR)

Concept → Research

Technology (Design/Development) → Research

Tested Artifact

Research-oriented Design (RoD)

Concept → Research

Artifact (Design/Development) → Research

Creeps
Design Research

Design-oriented research (DoR)

Concept

Research

Technology (Design/Development)

Research

Tested Artifact

Creeps

Research-oriented Design (RoD)

Concept

Research

Better Artifact

Creeps
Types of Creeps

- **Convenience creep**
  - E.g. Available software libraries

- **Experience creep**
  - E.g. Memory fragments of designs

- **Feature creep**
  - E.g. One more function

- **User input creep**
  - E.g. User is king
Technology design/implementation

Seed Concept

Design decisions
Space of possible designs

- Your concept
- Your design
- Existing designs

Creeps
Space of possible designs

Your concept

Your design

Existing designs

OK for IxD but not HCI
Digging of cards takes time.

Stacking device - Keep cards closer to surface - Card scanning without removal.

Card use at counter

Philosophy

Seed Idea

Gatekeeper wrt Requirements

Usability, UX

Market success

IxD project
Digging of cards takes time

Stacking device - Device provides faster counter experience to user

Faster counter experience improves people's identification with a store

Gatekeeper wrt Requirements

Iterative idea refinement

Usability

Prototype design idea

User testing

Engineering

Prototype design idea informs

User testing building NEVO

Iterative testing

Does it improve user's store identification?
The SVP Idea Tracking Table

CONCEPT: ____________________________

SEED IDEA: __________________________

<table>
<thead>
<tr>
<th>Idea-Defining Characteristics</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
</tr>
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<table>
<thead>
<tr>
<th>System Component</th>
<th>Design Idea</th>
<th>Accepted?</th>
<th>Why?</th>
</tr>
</thead>
<tbody>
<tr>
<td>XXX</td>
<td>XXX</td>
<td>Yes</td>
<td>Abcddefj</td>
</tr>
<tr>
<td></td>
<td>YYY</td>
<td>No</td>
<td>bcdefjh</td>
</tr>
<tr>
<td>ZZZ</td>
<td>NNN</td>
<td>No</td>
<td>hijklmnop</td>
</tr>
<tr>
<td>PPP</td>
<td>KKK</td>
<td>Yes</td>
<td>qrstuvwxyz</td>
</tr>
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Prior work – general observation: children’s imagination contrives narratives that do not contrive actual background. Prior work – given context constraint: necessary spur child’s interest in narrative. Technical feasibility and ease-of-use foster idea discussion and articulation of aspects that the SVP methodology specifies as being important, and factor into the overtness in drama performance. The idea-defining characteristics were defined to be as follows: The idea need to proceed, and embody enactment (with or without child should be able to make use of mechanics were defined to be as follows: The idea need to actualize creative ideas in storytelling projects in which the SVP methodology was applied. Additionally, gatekeeping crosscheck’ at block on the insertion of this formalization (E) is typically done together with the SVP idea tracking table (see Figure 8). The table essentially allows for the idea tracking during the accretion process of the seed idea. Here, a second choice needs to be made. If the design idea is a necessary aspect of the system, the process proceeds to development; if not, it is rejected. The result of this process is a prototyping process that would allow the to create storytec
What type of research are you doing?

<table>
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