Welcome

Thank you for choosing this Seminar
Our Goals

- Introductions
  - Background analysis
  - Go over syllabus
  - Finding potential project teammates...

- User-centered design and usability
  - Parallel on demand lectures
  - Practical Activities
  - Revisit syllabus - Focus on readings

- Project
  - In Group of three people (magical number)
  - Group formation and project selection

Grading

- How to get a (positive) grading
  Part 1+2 (70 %): Project Presentation + Paper

- Doing a project work in groups of 3 people and proceed in conference contribution style
  - Select a project idea
  - Work on the project together
  - Write a paper together (max. 3 authors)
  - Submit to Committee (peer review)
  - Presenting the paper in plenum
  - Discuss
How to get a (positive) grading
Part 3 (30%): Written Examination

Answering questions of UCD Theory
- Dichotomy YES/NO Decisions
- Multiple Choice
- Open Ended Questions

Harsdoerfer (1607-1658)

Refer to Holzinger (2001)
PLEASE CONSIDER: Learning is a basic cognitive **process** … not an object...

Teachers: 

- Data
- Information
- Knowledge
- Intelligence
- Reflection

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**Teacher-Centered**

"Knowledge" (BEWARE!) is transmitted from teacher to student

**Learner-Centered**

Students construct Knowledge (Yes!) through gathering and synthesizing information and integrating it with the general skills of inquiry, communication, critical thinking and problem solving.

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*Skinner (1954), Gagné (1965), Holzinger (2000)*
Teacher-Centered

Emphasis is on acquisition of knowledge outside the context in which it will be used.

Learner-Centered

Emphasis is on using and communicating knowledge effectively to address enduring and emerging issues and problems in real-life contexts.

Holzinger & Motschnig-Pitrik (2005)

Course Design principles

1) Assumptions

- Learning aims to the construction of KNOWLEDGE
- Every student is diverse with different background
- Students have a lot of preliminary knowledge to bring in class
Course Design principles

2) Fundamentals

- Provide varied ways for students to learn & demonstrate knowledge
- Ensure students have opportunity to learn from each other
- Manage participant burden

Course Design principles

3) Elements

- Practice User-Centered Design activities
- Reflect on UCD activities through discussions
- Learn from perspectives of others
- Various interactions (work together, present, summarize, discuss ... *synthesize*)
[Pre-1975]:
- Computing systems with specialized interfaces, expert users,
- Severe limitations in terms of interface, computing power stands in foreground!

Computers enter the hospital: 1960

- Information is still gathered manually
- Massive storage and quick retrieval
- Very limited ‘sharing’ due to restricted network and proprietary systems
- Used mostly for accounting functions
- 1977: Release of Apple II with graphical interface
- 1985: Gould and Lewis promote User-centered Design
- 1988: Norman and Draper, *User-centered System Design*
- [1990's] -
  - Interest in field methods,
  - Rapid increases in computing power and options,
  - Emergence of prototyping tools,
  - Global marketplace,
  - Internet...
- 1999: ISO standards for human-centered design
- 2001: FIRST Special issue IJHCI, Human-centered design

**Usability** is the typical way a product is evaluated

**Usability Engineering (UE)** is all encompassing to enable good Usability

**User-centered design (UCD)** is one approach of UE to incorporate the end-user in design and development (User-centered development)
XP + UE = XU

Holzinger, Errath, Searle, Thurnher, Slany (2005)

Audience Analysis

- “Know thy end-users”
- Common dimensions include
  - Role – Dominant persona of users (job, affiliation)
  - Goals – Reason for the interaction
  - Circumstances of Use – Setting, resources, strategy, timing
  - Culture – Group level beliefs, language, preferences
  - Ergonomics – Relevant perceptual & motor abilities, skills
Know thy end-users!
- Cognitive abilities
- Physical abilities
- Motivational background
- Previous knowledge and skills!

Keep users involved throughout the development process ...

Tell about yourself

Please record the following information clearly on an index card:

- Name
  (or preferred way to address you)
- Best way to contact you
  (e.g. email, phone ... etc.)
- Domains of interest
  (e.g., medicine, e-commerce ... etc.)
Areas of interest

- Medicine/health: Gig, Thomas, Daniel, Conny, Bernd, Toni, Sabine,
- Public: Markus, Verena, Christian,
- Communications: Thomas
- Civil Engineering: Martin1
- Media: Gernot, Martin2, Toni, Hans-Peter, Martin3, Peter2, Sabine, Peter, Chrissi,

Self-characterization: Indicate your level of agreement with the following statements by recording low, medium, or high for each:
- I consider myself a designer
- I consider myself adept at incorporating user considerations into my work
Getting a sense of the class…

Already are designers…

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Adept at prioritizing user issues…

Task 1

- Design process: Write down the sequence of five major steps one should go through in developing and evaluating a new software system for end users
Zenz, Singer und Zangl:

1. Zielgruppe / Anforderungen
1a. Erwerb von Domänenwissen, Contextualisation
1b. Abgleich Anforderungen Benutzer / Auftraggeber

2. Prototyping
2a. Auftrennung von Logik und Benutzerinterface

3. Modifikation / Redesign
4. Usab. Tests
5. Implementierung

Task 2

Techniques: What techniques do you use (have you used) to focus on end-users in your work?
Evaluation criteria:
What criteria would you use to evaluate
a) a hair dryer

Preis
Leistung (Luftdurchsatz, Wärme, Kälte)
Einstellungsmöglichkeiten
Größe / gewicht
Ergonomie / Geräuschentwicklung
Kabellänge
Optik
Sicherheit
Verarbeitungsqualität
Spannung umschaltbar
Erweiterungsmöglichkeiten
Intuitive Steuerung ;)

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Evaluation criteria:
What criteria would you use to evaluate
b) a Web site for Online Health Resources

Aufteilung in wissenschaftliche Bereiche
Grundsuchfunktionen: Körper(-teile)
3D-Ansichten, Krankheiten, Medikamente,…
Weltkarte zum Anklicken (Reiseempfehlungen z.B. Impfungen)
Multimedia-Archiv (Audio, Bilder, Video)
Empfehlungen für weitere Ansprechstellen (Ärzte, Krankenhäuser,…)

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Benchmarks gegen die Evaluiert werden kann:
- Vertrauenswürdigkeit
- Accessbility
- Scalability (Skalierbarkeit/Tiefe der Inhalt)
- Harmlosigkeit
- Arzt-Deutsch Übersetzung
- Regionalisierung/Adaptivität

Evaluation criteria:
- What criteria would you use to evaluate
- c) an Hospital Information System (HIS)
Thanks!