
UNIVERSITY OF DAR ES SALAAM

COLLEGE OF ICT

Human Centered Design

Seminar 2



Seminar Leader

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Objectives

The objectives of this course are to:

- Train students in applying human-centered design (HCD) to identify opportunities for innovation.
 - Equip students to understand and utilize replicable design research methods to conduct rigorous research and transform insights into projects with economic, social, cultural, or environmental value.
 - Expose students to a composite view of international development and ground realities, and prepare them to utilize their knowledge and skills for social good.
 - Develop prototypes of interventions into complex systems with an understanding of the potential impact
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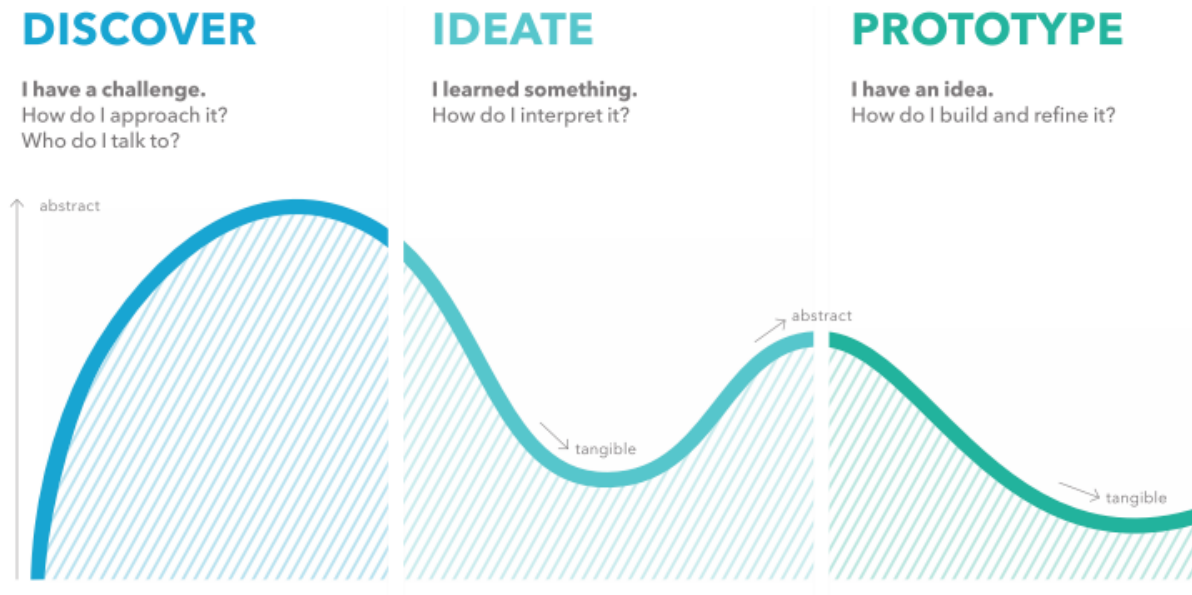
Content

- Introduction, Social Systems and Human Centered Design
- Design research Part I
- Design research Part II
- Understanding your User/Client



Human Centered Design (HCD)

- ▶ Recall, HCD consists of three phases:
 - Inspiration/Discover Phase
 - Ideation Phase
 - Implementation/Prototyping Phase



Human Centered Design (HCD)

▶ HCD Inspiration/Discover Phase

- Starts by getting out into the world.
- Learn social interaction of the people you're designing for.
- Immerse yourself in lives of the people and come to deeply understand the problem.
- Understand the significance of the problem and why is it necessary to find solution.



Human Centered Design (HCD)

- ▶ Classic starting point of Inspiration Phase is Design Research
- ▶ Design Research
 - A set of mental constraints that gives project team a framework to begin with.
 - Tool for systematic exploration of issues surrounding the problem.



HCD – Design Research I

- ▶ Discussion with participants...
- ▶ What is the problem you are trying to understand through your research?
- ▶ Why is it important? [2-3 sentences]



HCD – Design Research I

► What are your key research questions?

1) ...

2) ...

3) ...

4) ...

5) ...



HCD – Design Research I

- ▶ What design research methods will you use for each research question?

1) ...

2) ...

3) ...

4) ...

5) ...

For each method:-

- Where will you go?
- Who will you talk to?



HCD – Design Research I

- ▶ There are two types design research methods to enable gathering of information

- 1) Quantitative

- 2) Qualitative



HCD – Design Research I

- ▶ **Qualitative** research is concerned with narrative information under less structured conditions that often takes the research context into account
 - Descriptive and exploratory research
 - Purposes: describing conditions, exploring associations, formulating theory, generating hypotheses

- ▶ **Quantitative** research involves measurement of outcomes using numerical data under standardized conditions.
 - May be used along the continuum of research



HCD – Design Research I

► Qualitative Study

- Seeks to describe how **individuals perceive** their own experiences within a **social context**
- Emphasizes **in-depth understanding** of human experience and interactions
- Methods include **in-depth interviews, direct observations, examining documents, focus groups**
- **Data** are often **participants' own words** and narrative **summaries of observed behavior**



HCD – Design Research I

▶ Example of Qualitative Study

- A researcher wants to understand how provision of healthcare to undocumented persons affects the people and institutions. The study may involve:
 - ✓ **Problem:** information gathered from undocumented patients.
 - ✓ **Where and Who:** Primary care clinicians, specialists, and hospital administrators.
 - ✓ **Methods:** in-depth interviews, key informant interviews, participant observations, case studies, focus groups



HCD – Design Research I

- ▶ **Strength and Weakness of Qualitative Study**
 - **Strength:**
 - ✓ Data based on the participants' own categories of meaning
 - ✓ Useful for studying a limited number of cases in depth or describing complex phenomena
 - ✓ Provides understanding and description of people's personal experiences of phenomena
 - ✓ Can describe in rich detail phenomena as they are embedded in local contexts
 - ✓ The researcher can study dynamic processes (i.e., document sequential patterns/change)

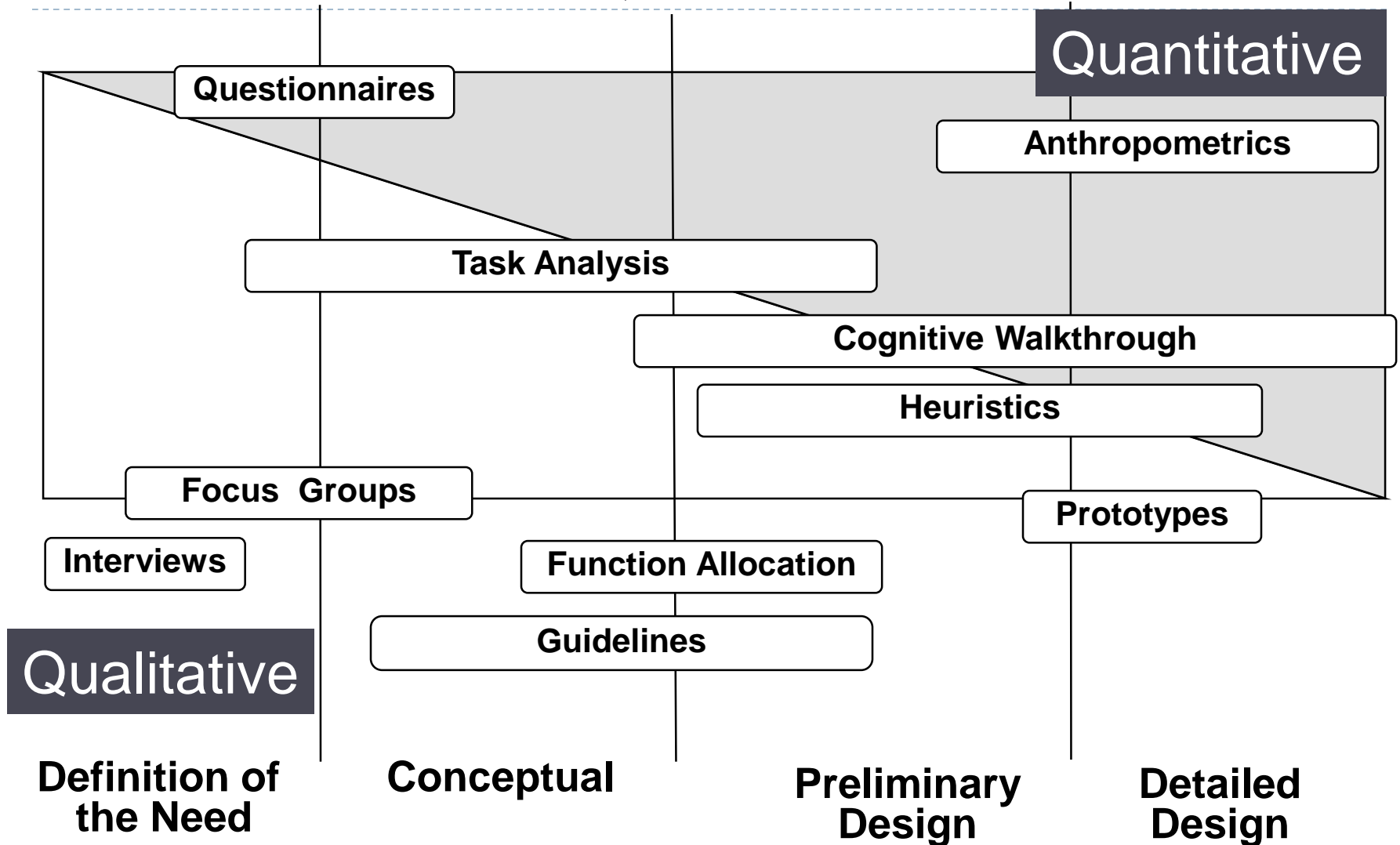


HCD – Design Research I

- ▶ **Strength and Weakness of Qualitative Study**
 - **Weakness:**
 - ✓ Knowledge produced might not generalize to other people or other settings
 - ✓ It is difficult to make quantitative predictions
 - ✓ It might have lower credibility with some administrators and commissioners of programs
 - ✓ Takes more time to collect and analyze the data when compared to quantitative research
 - ✓ The results are more easily influenced by the researcher's personal biases and idiosyncrasies



HCD – Design Research I (Tools & Techniques Plane)



HCD – Design Research I

► Quantitative Study

- Assume some preliminary work has accomplished
- Involve experiments to lead into quantified results
- Three types of quantitative study
 - ✓ Experimental
 - ✓ Quasi-experimental
 - ✓ Non-experimental

► Thus according to **tools and techniques plane**, the **HCD inspirational phase** use **Qualitative plus Questionnaire**.



Design Research I (Interview)

- ▶ Purpose: Useful for reaching target populations and gathering rich information
 - ▶ Types: structured, unstructured
 - ▶ Making sure the following are covered:
 - The interview's purpose, explained at the outset.
 - Enumerating activities by asking a general question, e.g., “What are your tasks?” and following this up with more specific questions.
 - Work methods: finding out how tasks are performed.
 - Performance issues. These provide a measure of the “usability” of the current support system and the need for improvement.
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Design Research I (Focus Group)

- ▶ Purpose: Useful for reaching target groups of users to get consensus information on product information
- ▶ Method: Facilitated workshops of groups of 5-10 people
- current or likely users
- ▶ Type of Information: subjective (tasks, requirements, product ideas, etc.)



Design Research I (Questionnaires)

- ▶ Purpose: Useful for reaching large populations and thus gathering large amounts of data
- ▶ Issues to consider in design:
 - The need to make things easy for the subject.
 - The need for unambiguous questions.
 - The need to gather precise data.
 - The need to support the intended analysis.



HCD – Design Research I

- ▶ **Now revisit your question for practice:**
 - ▶ What design research methods will you use for each research question?
 - 1) ...
 - 2) ...
 - 3) ...
 - 4) ...
 - 5) ...
- For each method:-**

 - Where will you go?
 - Who will you talk to?

