A Primer on Design Thinking
Application to Accountability System Design

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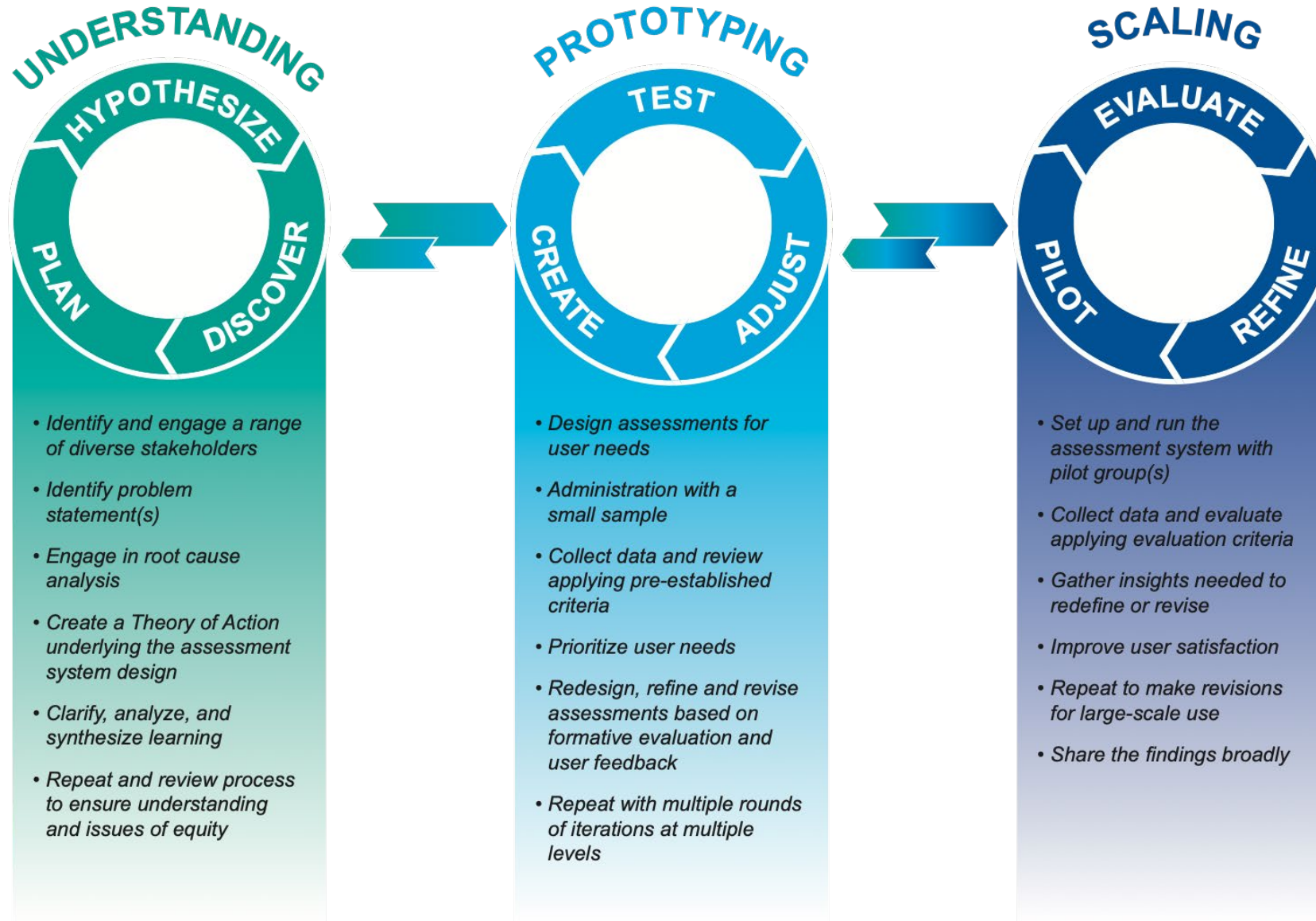September 24th, 2023

RILS 2021: Innovation Design

Design Innovation in Assessment

- In response to the pandemic, the Center pivoted to host the RILS conference virtually in 2021.

- Spearheaded by Jeri Thompson (now retired) and myself, the conference centered on the pivotal concept of "Design Innovation" in educational assessment.

- The aim was to capitalize on the extensive momentum in design innovation, exploring its applicability to modernizing and enhancing assessment development.

First Exposure to Design Thinking

- My introduction to Design Thinking originated in the early 2010s through my involvement in software development for the SchoolView data visualization platform.

- Concepts such as "Agile Development," "Scrums," "Personas," and "Prototyping" became integral to our development dialogue.

- At that time, I began to ponder the potential for these design methodologies to enhance the Center's work in educational assessment and accountability system design.

DESIGN INNOVATION PROCESS

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UNDERSTANDING

HYPOTHESIZE · DISCOVER · PLAN

- Identify and engage a range of diverse stakeholders
- Identify problem statement(s)
- Engage in root cause analysis
- Create a Theory of Action underlying the assessment system design
- Clarify, analyze, and synthesize learning
- Repeat and review process to ensure understanding and issues of equity

PROTOTYPING

TEST · ADJUST · CREATE

- Design assessments for user needs
- Administration with a small sample
- Collect data and review applying pre-established criteria
- Prioritize user needs
- Redesign, refine and revise assessments based on formative evaluation and user feedback
- Repeat with multiple rounds of iterations at multiple levels

SCALING

EVALUATE · REFINE · PILOT

- Set up and run the assessment system with pilot group(s)
- Collect data and evaluate applying evaluation criteria
- Gather insights needed to redefine or revise
- Improve user satisfaction
- Repeat to make revisions for large-scale use
- Share the findings broadly

A Brief Introduction to Design Thinking

What is Design Thinking?

- **Definition:** Design Thinking is a human-centered approach to problem-solving that focuses on understanding user needs, ideation, prototyping, and iteration.

- **Core Phases**:
  - Empathize
  - Define
  - Ideate
  - Prototype
  - Test

- **Importance:** Allows for creative solutions to complex problems by integrating the needs of people, the possibilities of technology, and the requirements for program success.

Core Phases: Empathize

Objective: Understand your users' needs, motivations, and challenges.

Methods: User interviews, observations, personas, and immersion in the user environment.

Importance: Builds a foundation for designing solutions that are rooted in real-world needs and problems.

Core Phases: Define

Objective: Clearly articulate the user's needs and the problem to be solved.

Methods: Synthesis of data, framing the problem statement, theory of action.

Importance: Ensures that everyone is aligned and focused on solving the right problem.

Core Phases: Ideate

Objective: Generate a wide variety of potential solutions.

Methods: Brainstorming sessions, mind mapping, and lateral thinking.

Importance: Encourages creative problem-solving and lays the groundwork for innovative solutions.

Core Phases: Prototype

Objective: Create low-fidelity models of the best ideas from the ideation phase.

Methods: Sketching, mock-ups, digital wireframes.

Importance: Allows for rapid testing and iteration, helping to identify the most viable solutions.

Core Phases: Test

Objective: Validate the effectiveness of the prototype by collecting user feedback.

Methods: Evaluation, user testing sessions, A/B testing, surveys.

Importance: Provides valuable insights for refining the solution and ensures it meets user needs before full-scale implementation.

Design Thinking in Educational Accountability

Aligning Design Thinking with Educational Accountability

Understanding Users: Parents, Teachers, Students, Administrators, and Policy Makers

Defining Problems: What issues do existing accountability systems face? (E.g., Lack of Fairness, Inequality, Ineffective, Obscure and Complex)

Ideation & Prototyping: Development and introduction of new indicators.

Understanding Users

Objective: Identify the needs, motivations, and challenges of all stakeholders involved in educational accountability.

Who are the Users: Parents, Teachers, Students, Policy Makers, Educational Assessment Specialists

Methods: Stakeholder interviews, surveys, and participatory design sessions, personas.

Importance: Builds a robust understanding of stakeholder needs, shaping the direction of accountability system design.

Defining Problems

Objective: Clearly state the issues and challenges that existing accountability systems face.

Examples of Problems: Lack of fairness, inequality, inadequate representation of student growth, etc.

Methods: Data analysis, literature reviews, and expert consultations.

Importance: Ensures focus on solving the most pressing problems in educational accountability, increasing the efficacy of the resulting solutions.

Ideation & Prototyping

Objective: Develop creative and effective indicators and dissemination strategies for educational accountability systems.

Methods: Brainstorming sessions, prototyping workshops, and iterative testing.

Importance: Facilitates the creation of new tools and metrics that better capture the nuances of educational outcomes and foster equity.

Benefits of Applying Design Thinking to Accountability Systems

Transformative Outcomes

Enhanced Stakeholder Engagement: Active involvement of all parties in the design and implementation stages.

Dynamic Indicators: Allows for the creation of more responsive and fairer methods of assessment.

Continuous Improvement: Regular feedback loops enable ongoing refinement of accountability systems.

Enhanced Stakeholder Engagement

Objective: Involve all stakeholders in the process of design and implementation, ensuring their needs and perspectives are integrated.

Methods: Workshops, focus groups, and continuous feedback loops.

Importance: Creates a sense of ownership among stakeholders, leading to more successful and sustainable solutions.

Dynamic Indicators

Objective: Develop indicators that are adaptable, fair, and focused on defensible outcomes.

Methods: Iterative prototyping and testing, analytics, and longitudinal studies.

Importance: Allows for indicators that can evolve with educational paradigms, meeting the needs of a diverse student population.

Continuous Improvement

Objective: Establish mechanisms for the ongoing refinement and adaptation of educational accountability systems.

Methods: Regular review cycles, analytics, and user feedback to iteratively improve the system.

Importance: Encourages a culture of continuous improvement, ensuring the system remains effective and relevant over time.

Caveats

Getting Our of Our Own Way

Jargon/Terminology: Our field is a MESS with terminology

- Words are used incorrectly

- Words are used inconsistently

We need to get our house in order if we want to MEANINGFULLY engage non-technical stakeholders in this design process.