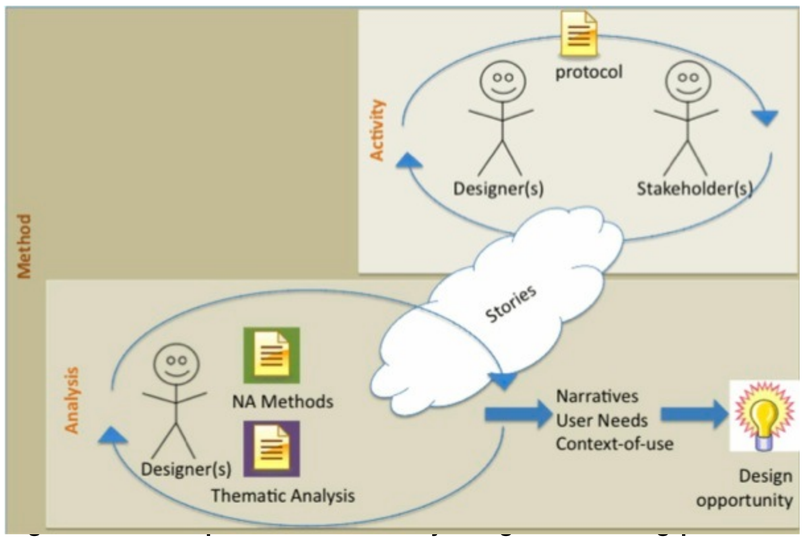
Using Storytelling to Inform Design: Narrative Analysis of ER Stories

Students: Erin Folly, Saba Sadeq, Chun Wang, Alan Torrico-Lopez
Advisors: Kim Gausepohl and Dr. Woodrow Winchester III

Grado Department of Industrial & Systems Engineering
Human Factors Engineering and Ergonomics Center

Rationale

The purpose of this undergraduate research project is to explore the use of narrative analysis methods during the concept phase of design. As a design method storytelling may be viewed as both data gathering and analysis activities (Figure 1).



exploration.

First, designers use a protocol incorporating narrative inquiry techniques to elicit stakeholder stories. Designers use qualitative methods (i.e., narrative & thematic analysis) to analyze the collected stories. Outputs of the analysis include narratives, user needs, and a deeper understanding of the context-of-use, which help designers identify a design opportunity. **This poster presents the narrative analysis process used to form ER nurses' stories into narratives with a consistent structure.** These narratives were used by ISE 3614 (i.e., Introduction to Human Factors) students to inspire design of products which address unmet ER nurses' needs.

Process

UTILIZING STRUCTURAL COMPONENTS TO TRANSFORM STORIES INTO CONCISE NARRATIVES

The narrative analysis process utilized in this study incorporates Labov & Waletzky's (1967) structural approach, which provides a consistent structure across created narratives.

Component	Operational Definition
ABSTRACT	Summative statement
ORIENTATION	Contextual information (i.e., character & setting description, background info)
COMPLICATING ACTION	The "Plot" Temporal sequence of events Conflict
RESOLUTION	Result
EVALUATION	Opinion & reflection of events

Table 1. Narrative structural components

INCORPORATING BEST PRACTICES FROM QUALITATIVE INQUIRY

The goal of the analysis process was to transform ER nurses' stories into narratives that could be used by ISE 3614 design students to inspire the design of new products or process solutions. Best practices from qualitative research, such as an iterative approach and the use of multiple analysts, were used to encourage a rigorous analytic approach.

STEPS	
1	Individually read participant's response within the transcript (i.e., the ER nurses' story relating to an Institute of Medicine (IOM) quality aim.
2	Individually categorize statements into narrative structural components
3	Reconcile results as a group to create one agreed upon narrative
	*Repeat steps 1-3 for all stories within transcript

Table 2. Narrative analysis process steps

USING RECONCILIATION MEETINGS TO CREATE THE "BEST" NARRATIVE

To reduce bias each transcript was independently analyzed by 2 separate undergraduate researchers acting as data coders. Discrepancies in the created narratives were reconciled during a meeting between the coders and a separate judge.

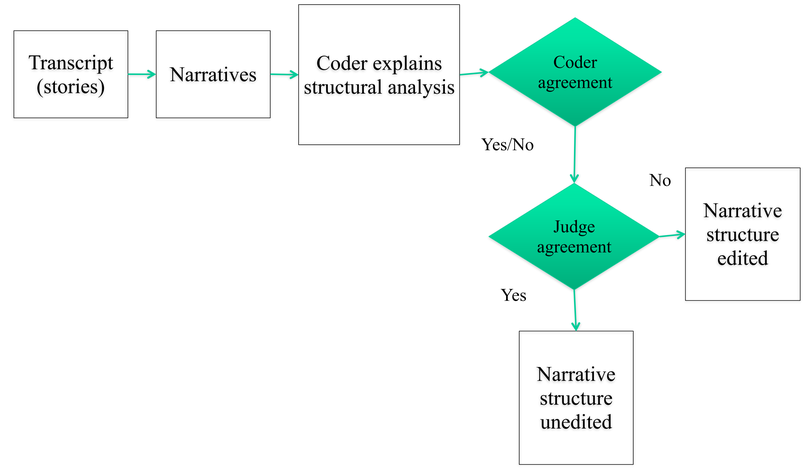


Figure 2. Structural analysis process

Reflections

Challenges:

- Habituals difficult to understand because interviewees did not answer the researcher's question accordingly; having many different complicating actions that were not related to each other ; terminology being used was difficult to relate to.

Suggested Process improvements:

- Further detailed categories could be added as narrative components. e.g. An "Extra thought" section could be split out of "Evaluation" to differentiate useful but less related reflections from the major narrative. This is to allow maximum retaining of original thoughts.
- Researcher's remarks, if containing helpful information, should be included in narratives. Any additional useful information outside demarcations of a narrative should be included.
- Sentences in the rearranged narratives could come not in order of time or line number sequence to allow better flow of story. Information not occurring in the same sentence but complementing understanding should be allowed in parentheses as a supplement of the original sentence.