

Capturing and Coordinating Dialogue in Participatory Design Research, Masters of Graphic Design Thesis, NC State University

BACKGROUND

This investigation explores the exchange of dialogue between an interdisciplinary design research team and a group of educators who are using participatory design tools and techniques to exchange and organize concepts and ideas.

As design practice has shifted away from designing discrete artifacts, designers and researchers have adopted participatory practices in which people are viewed by the researchers as co-designers and experts, rather than users and informants. These varied actors have a range of perspectives and methods of reasoning.

PROBLEM AREA

This investigation explores opportunities and conditions for capturing and coordinating dialogue, thereby facilitating and emphasizing a shared understanding between a team of designer-researchers and co-designers, who in this case, are developing a STEM-based curriculum for middle school students.

SOLUTION

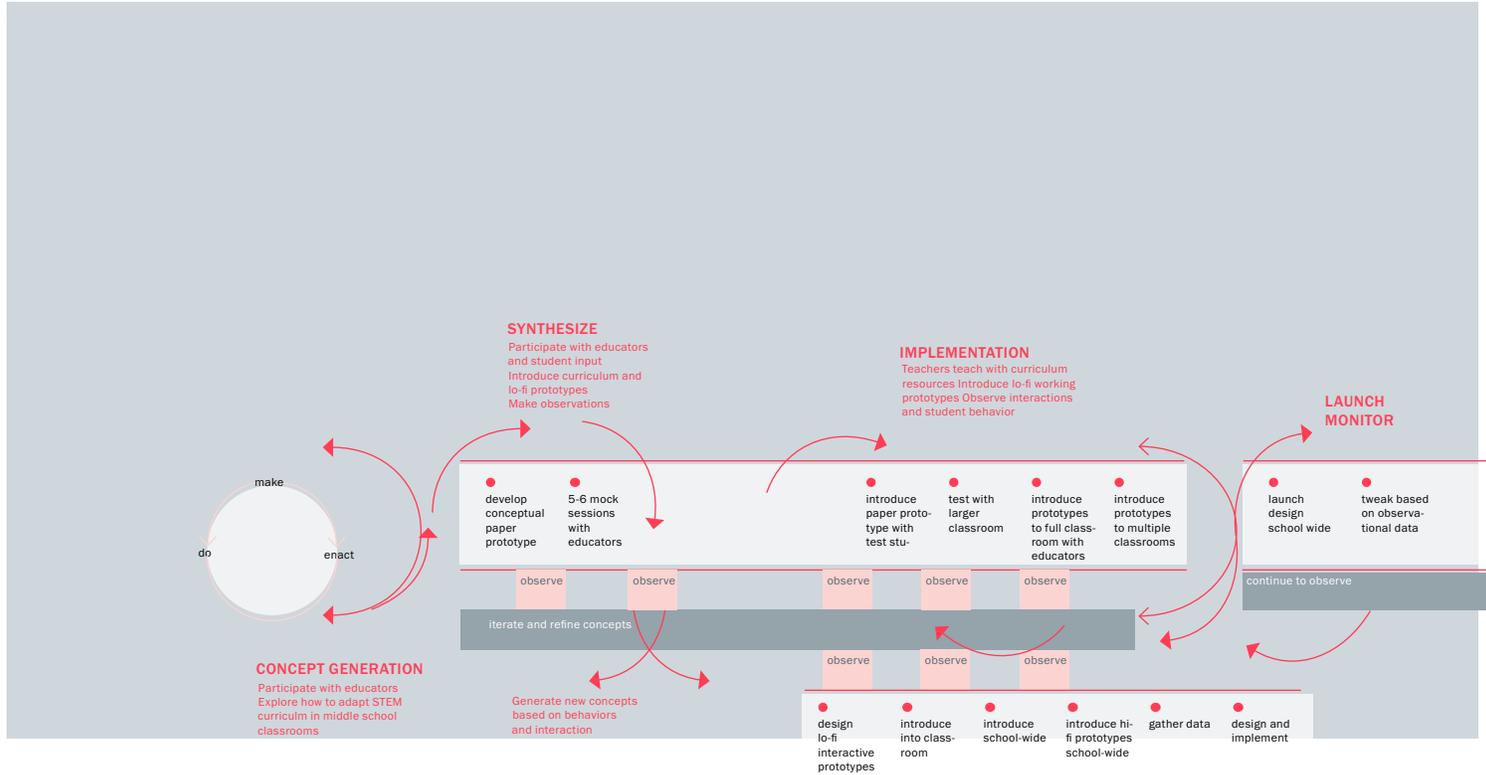
The solution is a speculative digital desktop tool that visualizes team discussion and dialogue encouraging team engagement and reflection on the improvisational process of workflow.

RESEARCH METHODOLOGY

- Theoretical Inquiry
- Precedent Studies
- Case Studies
- Contextual Inquiry
- Observation
- Scenario and Persona Development
- User journey mapping and task analysis
- Prototyping
- User Testing

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USER JOURNEY

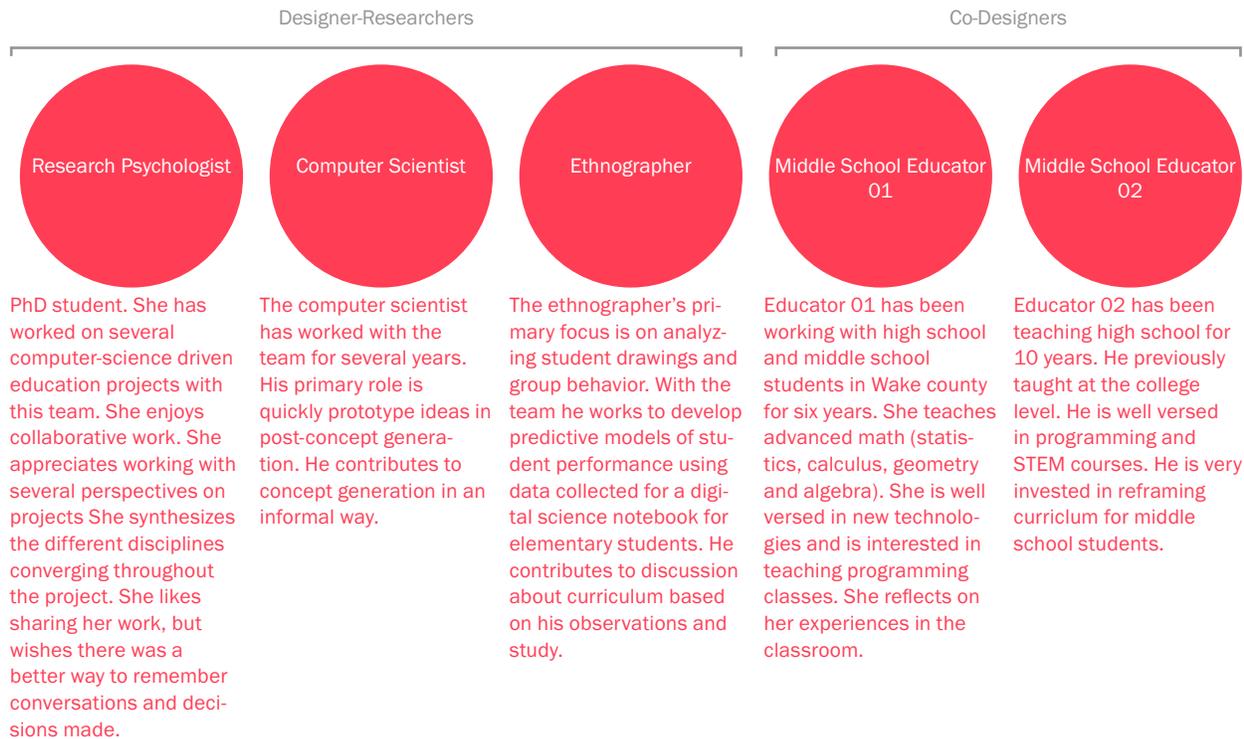


The user journey visualizes the overall process of how the educators (co-designers) and designer-researchers move through the iterative process. Throughout this process there are many inflection points where the exchange or organization of information between participants reframes the problem space. This investigation focused on capturing that exchange of information and reflecting on the steps taken.

This map was developed out of several observations, interviews and surveys of the designer-researcher and co-designer team. The team contributed to the development of this map indicating that they often don't distinguish their process into discrete phases when working, but do reflect on their work that way after the fact—this cognitive framing of workflow was incorporated into the solution.

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PERSONAS



SCENARIO

Throughout the investigation, I worked with a team of designer-researchers and co-designers at NC State University based out of the College of Engineering. This team works to adapt STEM curricula for middle school classrooms in the format of interactive and game based technologies. Much of their research focuses on large-scale studies of new learning technologies in public school systems.

As understood through qualitative analysis, the project moves through a *Planning and Scoping* phase where the team analyzes the main goals and the location and size of the project. Here researchers work with administrators to determine the school district as well as pinpoint classrooms.

Next the project moves into an *Exploration and Concept Generation* phase. This is where the interdisciplinary team works directly with educators as co-designers. Here the group works on how to adapt the curriculum for middle school learners through a series of collaborative writing exercises. The team also conducts observations and behavioral analysis in moving through a graduated process; from three to five to ten tests.

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INTERVIEWS

The personas, user journey, and scenario were informed by research. I initially conducted informal interviews establishing a basic understanding of the team. After selecting team members to base the personas off of, I conducted repeated informal and semi-formal interviews and observations in order to verify my understanding and interpretations of the team and their behaviors. Below is selected interview and observational material.

Excerpt of Semi-Formal Interview Establishing an Understanding of the Team and Individual Behavior Patterns, Designer, 1/26/2016

N: What is your role and tasks relative to your team?

M: I am a designer that does both visual and interaction design. I am pretty much a maker. But I also work with the team in the sense that I come up with ideas and we discuss and talk about how those ideas can be implemented in a group setting, everyone does that on our team.

N: How does the team work together with the end-users, in this case, the education community, the teachers and the students, too?

M: Well, we definitely include the end-user, the participants, during usability testing, when we've come up with a new concept and design and we'd like to validate it by seeing if it's resonating with the students. They give us feedback and we iterate on the design. But also, we discuss things a lot. We have a really fluid process. We include two to four educators in our initial process—they are really involved in everything. Then we graduate and move up and include more educators in the lo-fi prototype phase. Everyone gathers around and we talk through it all. We observe and see how the educators are utilizing those teaching tools. These are all really distinct parts of the process. but often we don't really see it that way, you know. We move back and forth. It's imperative to see who is saying what and when—there will be points where someone will say something or do something that is so significant, but we don't really see it that way in the moment. But yeah, anyway we pretty much work with educators throughout. It's their thing as much as ours.

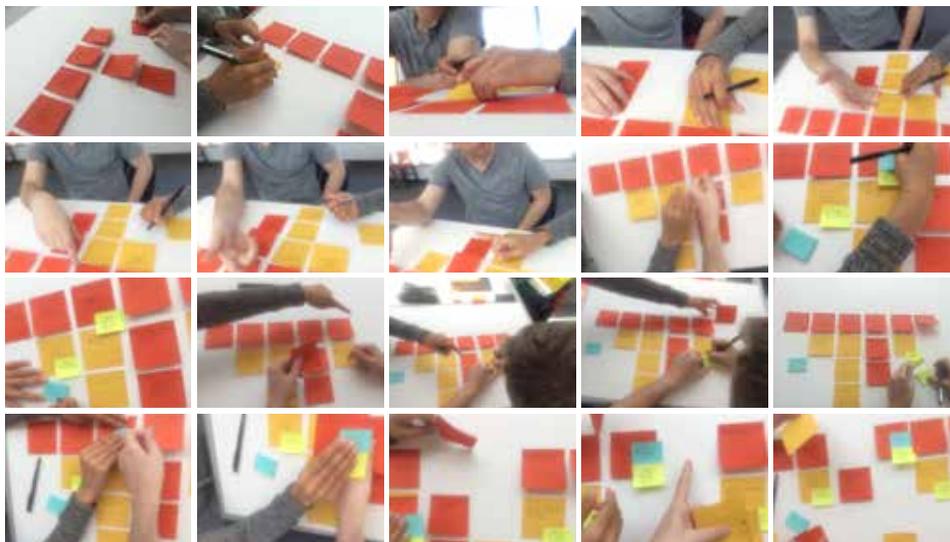
N; What are the ways in which you exchange ideas with team members?

M: There are a myriad of ways. It's really rather interesting. We are many different disciplines converging, so we all have different ways of working and different ways of externalizing our thoughts. But we are really invested in seeing how our end-users or co-designers want to externalize their ideas. So we've established this way of working where we all sit together, and write, post things up, and move things around. We take photos of this stuff and try to save it. There's also the typical email, and basecamp and that sorta stuff. We use mostly our computers to send stuff back and forth. (...)

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OBSERVATION

I conducted several studies observing specifically how the designer-researchers and co-designers work together to externalize and organize their ideas. This study was set up as a workshop with the purpose of observing participant techniques for developing ideas. The main objective of this observation was to observe how participants discussed the development of ideas together. Participants sat closely around the table, their shared workspace, and engaged in robust dialogue—involving the initial positioning of ideas, pointing, removal, repositioning, and more pointing.



CONCLUSIONS

These series of observations and discussions of activities developed into a framework for the visual prototypes.

DIALOGUE AND DISCUSSION TECHNIQUES		
Comments	Talk, point, eye-contact	explanatory and generative
Suggestions	Talk, point, write idea, eye-contact	explanatory and generative
Edits	Talk, point, write, position, reposition, eye-contact	explanatory and generative

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VISUAL PROTOTYPE



ANALYSIS

The resulting prototype is a speculative desktop tool that captures and coordinates dialogue and discussion. The visualization breaks down activities into the framework established through the research—comments, suggestions, and edits. Team members can point to content as they do in a face-to-face concept generation and organization process.

Previous iterations included an activity thumbnail and did not include the pointing elements. Color was used to indicate user rather than type of type of dialogue. When testing this with the team, they indicated that the representation of activity was redundant. In regards to color distinction, users indicated that this was not as important, rather they were more interested in noting what kind of feedback they were getting from their colleagues.

The studies also explored how teammates can use the tool to view on the improvisational dialogue and discussions in a more organized and structured way, similar to their cognitive framing. This establishes conditions transparency as the team begins to uncover team behavior and decision-making patterns.