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EMERGING TRENDS IN DESIGN RESEARCH

a design graduate course case study : exploring emerging spaces in the landscape of design research

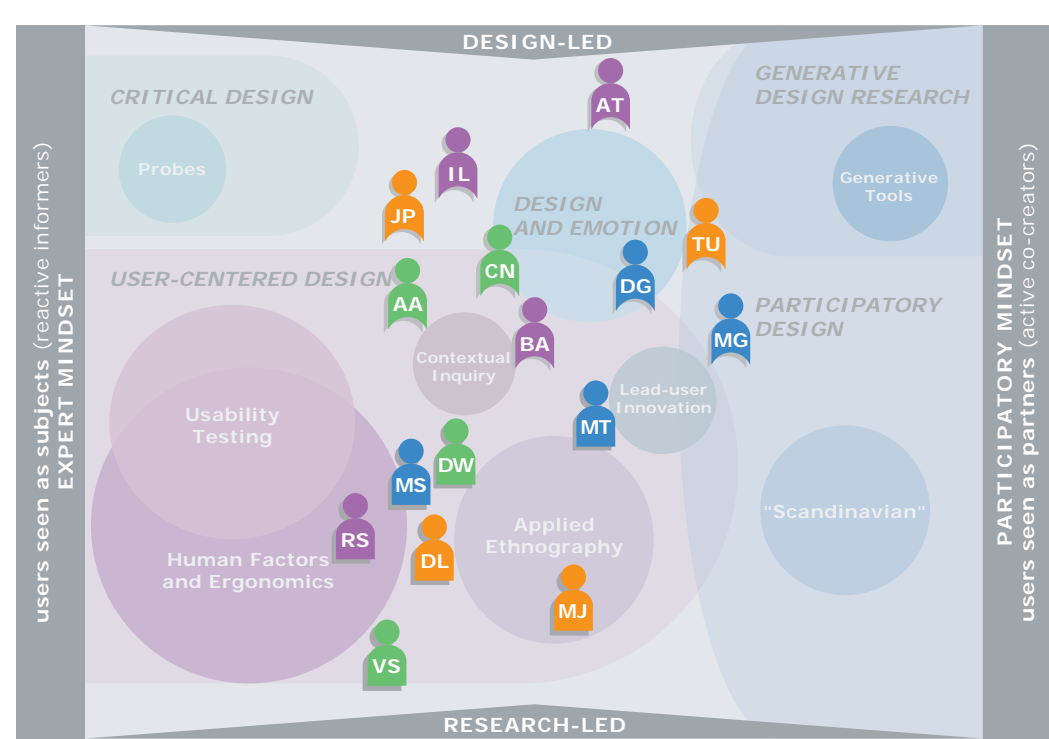
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Team Two
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Team Three
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Design Major
Engineering Major



These two posters showcase the efforts of four interdisciplinary teams of graduate students who participated in exploring emerging spaces in the landscape of design research. The exploration took place in a ten-week, hands-on design research course required of all first year graduate students in the Department of Industrial, Interior and Visual Communication Design at The Ohio State University. Students from other disciplines were also welcome to take the course. The disciplinary mix was about half design students and half students from across various fields of engineering.

The students were introduced to design research through a visual map of the field (Sanders, E. B.-N. 2006). The map shows a progression over time from expert-driven, research-led approaches toward participatory, design-led approaches to design research. The students were asked to show where they stood on the map as a result of their previous research experiences. All the students located themselves on the expert-driven side of the map, spanning research-led and design-led approaches. They were then asked to decide where on the map they would like to explore as researchers. The topics formed teams and chose research topics, methods and tools. Each of the teams was made up of people from both disciplines. All of the teams decided to explore in the direction of participatory, design-led approaches to design research. The posters show the results of their projects in mini-case studies.

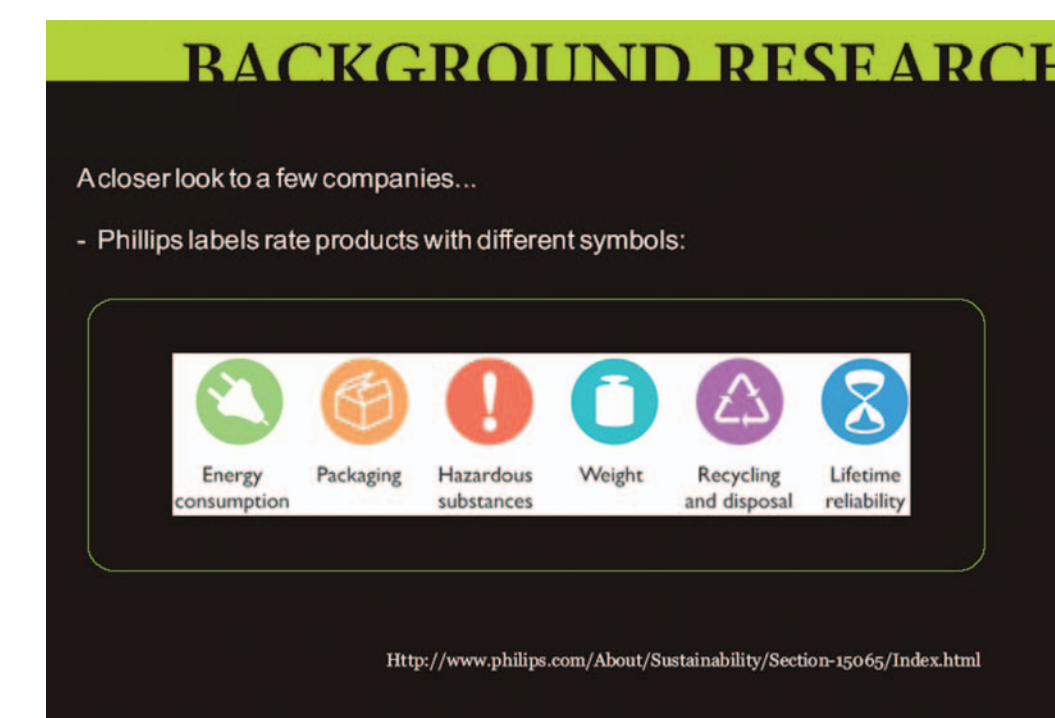
The course also employed a "writing to learn" thread with weekly journal assignments being used to probe students' thinking. The journal questions proved very beneficial in understanding the students' learning processes. The general consensus was that the course provided learning opportunities not only in new tools and methods of design research, but also important insights into interdisciplinary teamwork.

"Each research team decided to explore in the direction of the design-led, participatory mindset portion of the map - in the generative design research corner. They applied generative tools (also called "maketools") to their research projects in a wide variety of ways. For example, they used maketools to explore people's:
- understandings of current situations
- feelings about current experience
- emotions about product use
- future dreams for experience

"We emphasized learning about the process of design research more than the end result. Because we spent time in class for the teams to report on their progress throughout the quarter, each of the teams had the opportunity to learn from the learning experiences of the others. It was a rewarding learning experience for me as well." Liz Sanders, Instructor

Team One
Product Environmental Labeling

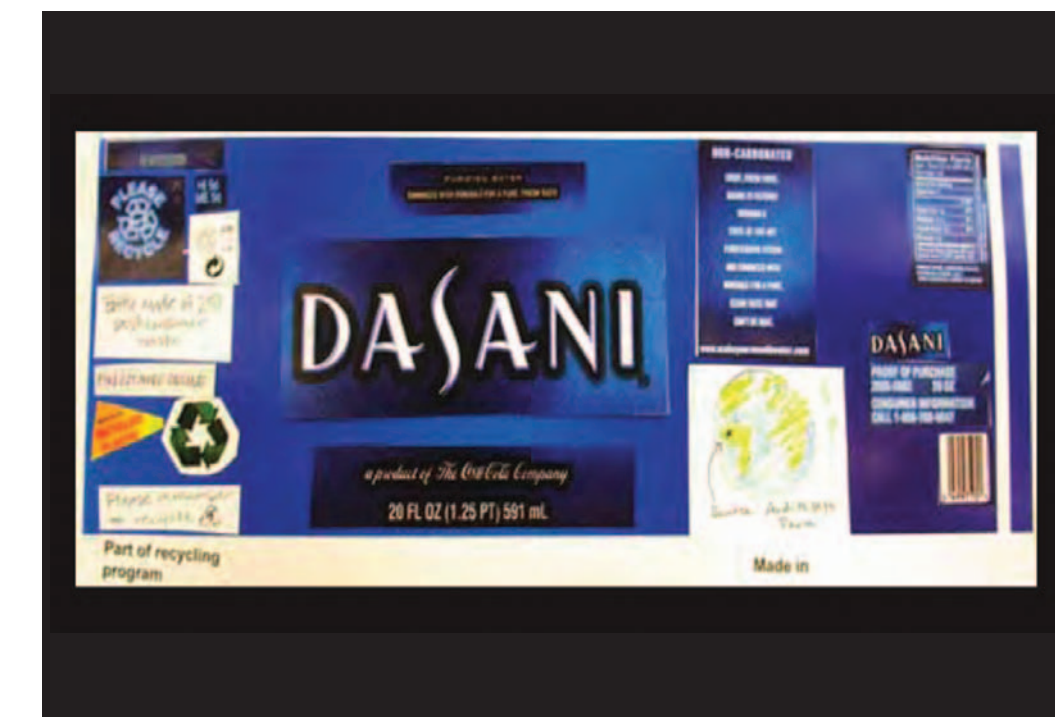
Objectives: 1) To identify how the environmental impact of a product influences the consumer at the moment of purchase, as compared to traditional factors. 2) To identify the information that consumers would like to see on a product's label or package at the moment of purchase. 3) To identify what information could be made available on the labels of products, which could help the consumer compare the environmental impact of similar products. 4) To use the direct input of different types of consumers to determine what information they consider important and helpful on the label of a product.



Background Research: How do different companies (Phillips, Herman Miller, Nike, and Timberland) approach environmental issues?

An online survey was conducted to determine the public's interest in environmental packaging and labeling. The team then created a maketools kit and asked two groups ('Green' and 'Average') to compose an "Ideal" label for both a branded bottle of water and a branded digital camera package. These two objects were chosen due to the differences in price and product type.

A wide variety of images and words were put into the maketools kit so that the participants could express their ideas about ideal package and label design. Words and images from the original packaging were also given in the toolkit in various sizes to assess how important the original packaging was to the participants.



The Green Group
(* people concerned with environmental issues)
- Considered every possible aspect of the products' environmental impacts
- Wanted much more information on manufacture, materials, potential hazards, resources used, proper disposal or return
- Was interested in the entire life cycle of the product

The Average Group
(** people not concerned with environmental issues)
- Was clearly concerned with things such as price, brand, features, quality of product
- Placed emphasis on selling the product, as opposed to educating the consumer

"I felt at first like we were creating projects without any real objective, rather than collecting data and using make toolkits. I do like to explore and I think that academic environments are all about exploration, but I also like to know that I am investing my time in projects that are meaningful to me or to the community. The feeling changed drastically when we had our session, and I could see that our ideas were real, and there was actually a lack of environmental information on product's labels and packages that needed attention and having the direct input of consumers to resolve the problem, was a really good way of starting.

I was happy with all our observations and with the effort that the participants put into the development of their ideal package and label, they were having fun, and were discussing serious matters at the same time, and I saw that a lot of valuable conclusions can be made of activities like this. That day I understood that I was actually learning a lot from the project and the class, and that my exploration had some direction." Catalina Naranjo

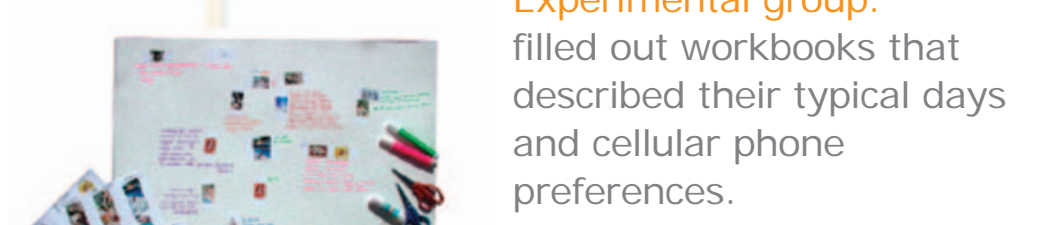
Team Two (Brainy Storms)
Brainstorming Methodologies: Traditional Method Versus Experimental Method

Objectives: 1) Brainy Storms method to compare the traditional brainstorming method with the experimental brainstorming method for generating ideas. 2) Understand the suitability of each method for different needs. 3) Learn how to implement these methods to our future research.

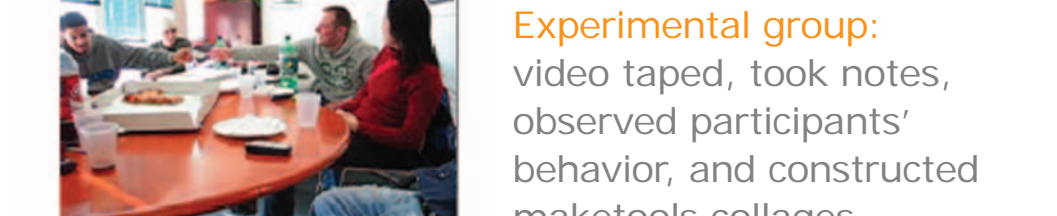


Focus Group thinking first model (Traditional Method)
Free Style Group seeing and doing first model (Experimental Method)

Data Collection (brainstorming sessions):
BEFORE
Traditional group: received no immersion, but was asked to bring cellular phones. During session, each had a round of introductions or short icebreaker.
Experimental group: filled out workbooks that described their typical days and cellular phone preferences.

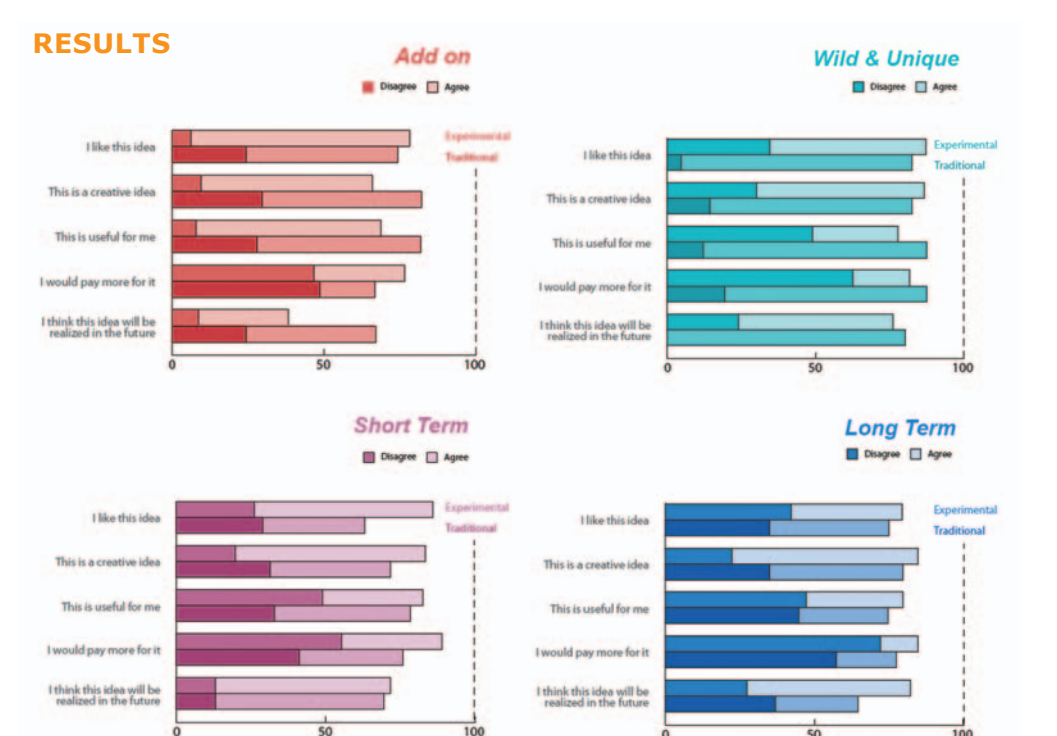
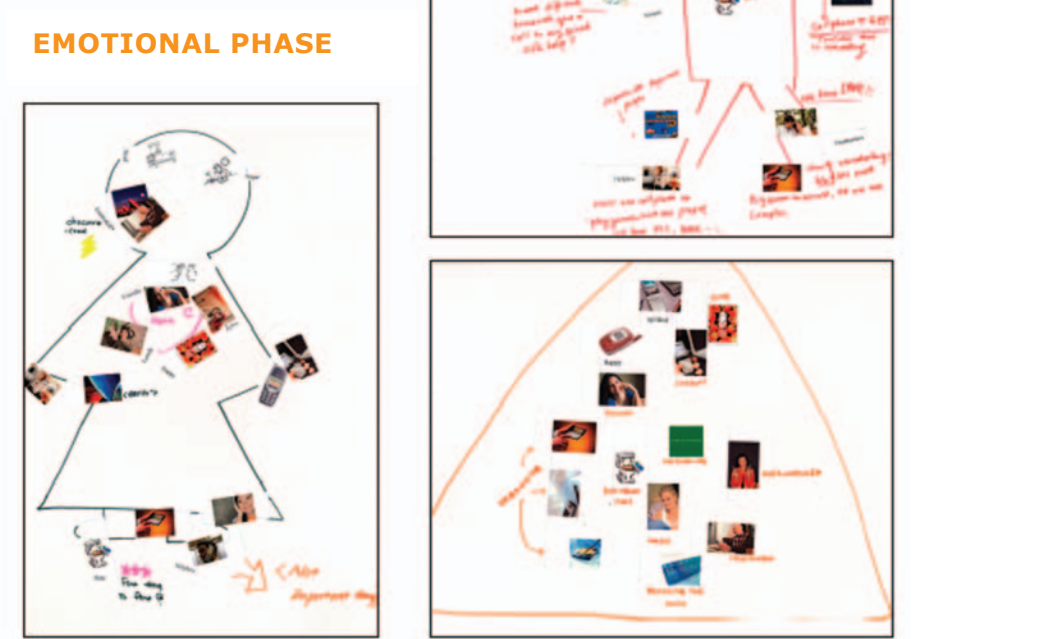
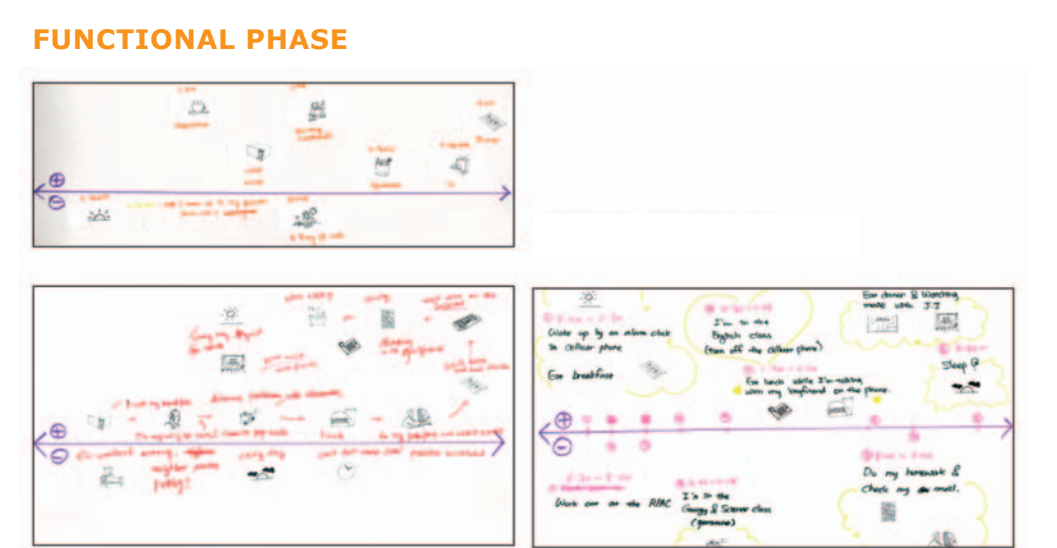


DURING
Traditional group: video taped, took notes, and observed participants' behavior.
Experimental group: video taped, took notes, observed participants' behavior, and constructed maketools collages



AFTER
Team members sort out ideas from the notes between the two groups, then watched videos twice to write down the ideas generated from video taped sessions.

Both groups were divided into three phases—
1) Functional Phase (encouraged to think and share about how they use a product, for what purpose, where do they use it and how it impacts their day).
2) Emotional Phase (encouraged to share how they feel rather than what they do).
3) Dream Phase (encouraged to let their imagination go wild and share about their dream product and their future experiences with it).



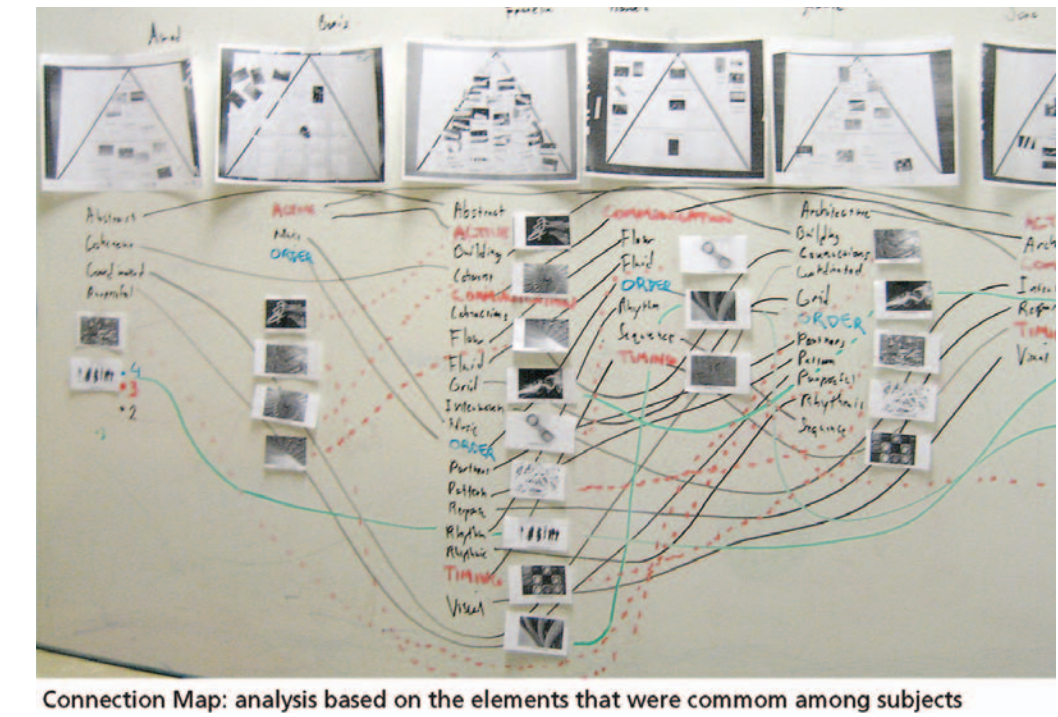
Conclusion: Overall, experimental method works better in terms of ideas' generativity and usefulness, which means the ideas generated by experimental group are more creative and useful. However, not many people agree on paying for the ideas. And they are relatively difficult to be realized in the near future. Additionally, from participants' experiences and the team's perspectives on both sessions, experimental group seemed to be more fun, collaborative and open, while it was more time-consuming.

"The purpose of the study was not to find out which brainstorming method is better, but to find out what understanding of the applicability of each method for meeting different needs. In addition, we also learned how to conduct a participatory design workshop and how to create a maketool kit for different purposes." Team two members

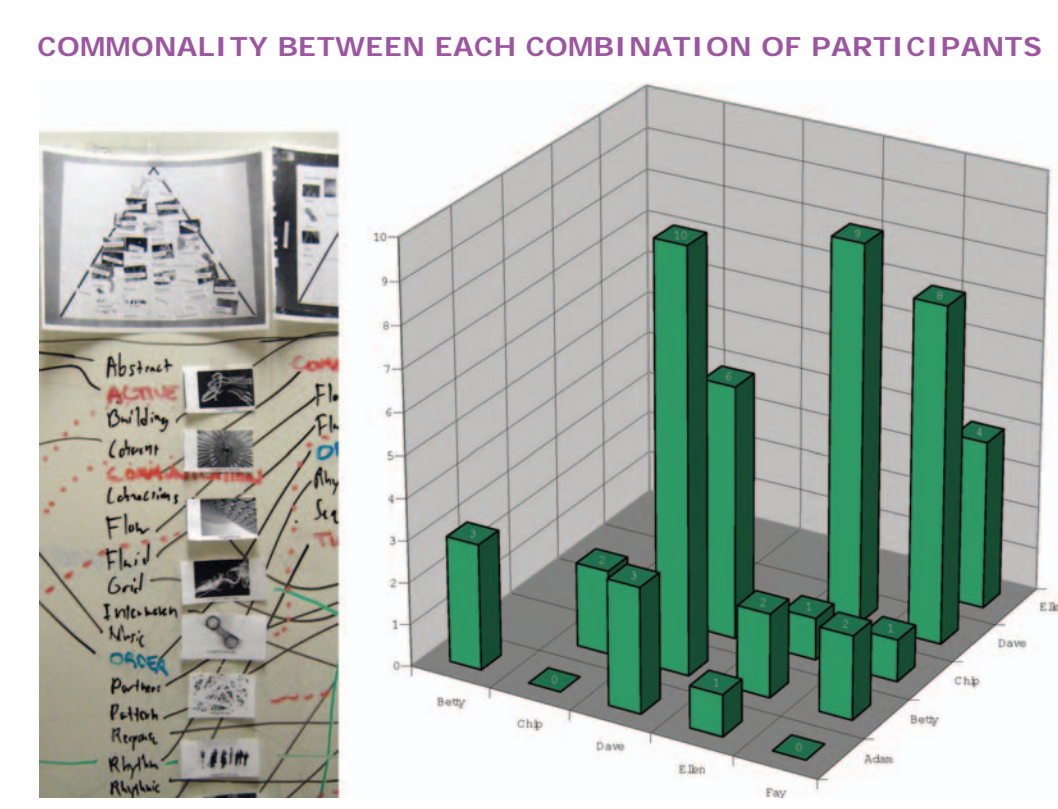
Team Three
Complex Event Perception

Objectives: The goal of this study was to determine if viewers perceive common visual information while watching a visually complex modern dance video. The researchers asked each participant for a response to the video immediately after it was finished. The team had created a maketools kit, which allowed participants to respond to the dance video individually. They captured each viewer's first impression of the material before revealing the tool kit, to prevent the maketools kit contents from leading their responses.

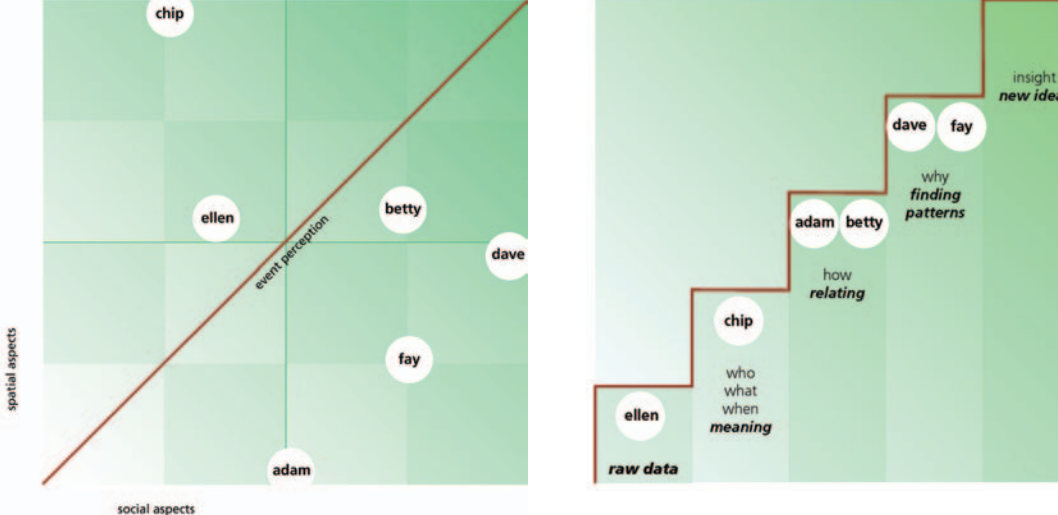
The tool kit contained 190 words and 153 images, printed out and cut apart. The canvas is a sheet of 20" x 24" paperboard with a drawn triangle. The triangle is divided into 3 sections. The triangle was meant to indicate a hierarchy—most meaningful or important items at the top. Each participant arranged the word/image items to show their interpretation of the video. The research team recorded each final composition with a digital camera so the next participant could use the same set for another composition.



The analyses performed were designed to generate statistical data on the commonalities between participants, usage of the available Maketools materials provided, and most significant concepts expressed by the participants' toolkits. The participants' composition was analyzed for Item Usage (which items were used), Commonality (which participants chose the most of the same items), and Ranking (which words were most commonly the most important).



MODELS OF UNDERSTANDING
Two different models were developed to explain the different ways in which participants perceived and then modeled the dance video. These models are based on the composition the participant created, as well as analysis of their explanation of the piece taken from the transcripts.



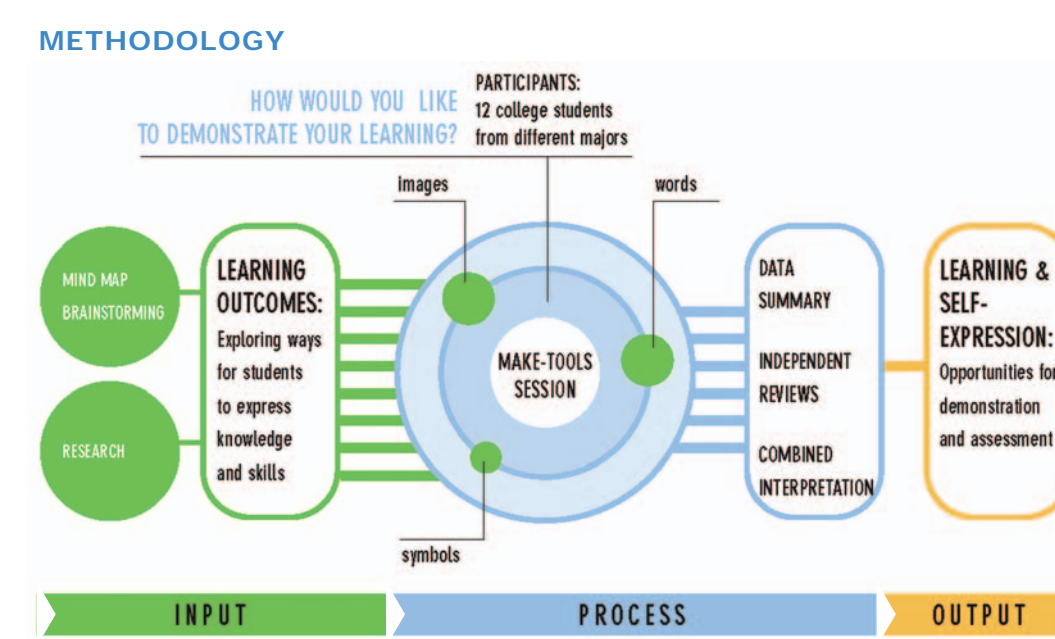
Conclusion: Participants saw the dance video clip generally in terms of spatial aspects or in terms of social aspects. There was variation in how participants understood the clip, but most perceived the cueing that was present but not obvious in the video clip. Participants selected common words and images at a rate better than chance to describe the scene. Based on these findings, the team concluded that their original hypothesis was correct: that participants would see common themes in the complex scene despite differences in their backgrounds.

"With the development of our research I confirmed an assumption that I already had, which was that the interpretation of visual information will always be related and biased to one's personal visual culture. I tried to control this issue and got more significant data using a video of a very complex choreography in which all the visual information seem to be completely random. Considering my personal interests on this practice, the process as whole and the results of this research give me an insight on possible paths to follow. For example, now I have a better idea of how I can explore and evaluate how the visual perception responds to a certain visual stimulus. More over, it gives me an idea of how time demanding the process of acquiring data can be, and it also gives me a better knowledge to manage and succeed with this challenge." Luri Lioi

Team Four
Learning and Self-Expression: Opportunities for Demonstration and Assessment

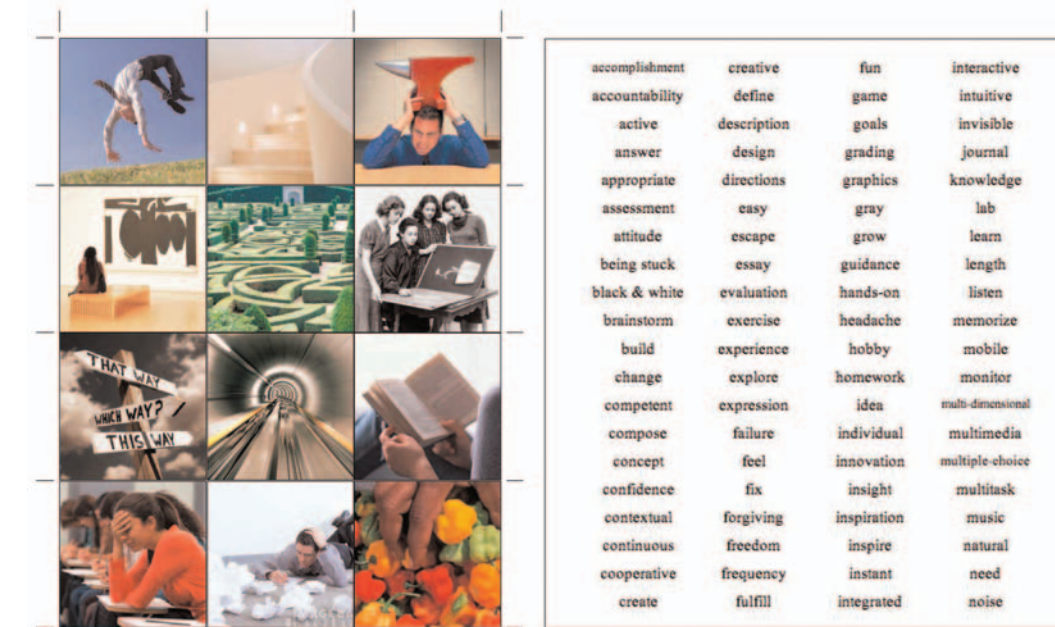
Objectives: Exploring what assessment methods students would like to experience in order to express their understanding of information learned in school and to discover which issues are relevant for assessment.

Rationale for this study: 1) Limits of current assessment. 2) Importance of assessment methods to learning. 3) Room for more creative, interactive, and generative methods.



Rational for using maketools: The team chose to use maketools over other methods to examine the question because they wanted to explore expressive and creative methods of communication. The question the team members posed aimed to discover students' ideas about how they could communicate what they learned in a course. By giving student participants a Maketool kit, the team hoped to give the students a creative way in which they could develop new ideas for assessment methods.

The process the team used to develop the maketools kit began with mind-map exercises in order to clarify the team members' ideas about assessment methods traditionally used in schools. Once they came to a consensus about relevant topics, they conducted literature review to gain an understanding of the topics from teacher's and educational researcher's perspectives.



Based on new learnings on assessment methods, the team members brainstormed a list of 211 words related to the topics, and then used some of the words as inspiration for maketools images. The team pilot tested the lists of words and images with students from a design foundation course. This allowed the team to eliminate words and images that were judged to not evoke thoughts and feelings related to the topics.

The team created a maketool canvas that allowed the participants to place relevant ideas about the topics closer to the center (ME).

ANALYSIS
- Review of notes and recordings
- Review of maketool collages:
• tally of words and images used by more than half
• summarized data by "mode of location" and "weighted average"
• Instructor interpretation of "learning styles" and "class observation"

INDIVIDUAL PRESENTATION OF MAKE-TOOL COLLAGE	INSTRUCTOR INTERPRETATION
KEVIN CENTRAL: Phone (for phone a lot) PERIPHERAL: "Phone" (for phone a lot)	Kevin is not concerned too far Need resources Structure Linear thinker Self-entertained
NP CENTRAL: "Phone" (for phone a lot) PERIPHERAL: "Phone" (for phone a lot)	Good organizer Observer Creative

Summary (discussion of maketools collages): There were concerns from a few participants about the diverse interpretation of images and they felt constrained by the pre-existing set of words and images. They suggested that creating their own maketools kit would be a better way to demonstrate their knowledge of a topic.

Conclusion (research topics):
- Importance of identity and learning (more than education assessment)
- Value creativity
- Balance between organization and structure (as restrictive vs. supportive)
- Instructions and clear expectation
- Feedback
- Value accomplishment
- Trial and error

"I think it was a very interesting idea to set engineers and designers in this class, although I think it might be helpful to have a little bit of preparation to this setting. Both fields have similar ways of thinking and somehow similar processes, but with different communication codes and understanding of how to reach objectives. While designers look at the big picture and question every step in the divergence process on gathering data, engineers tend to stick with few ideas and get quickly into details. An overview on the design thinking/process versus engineering thinking/process might help the understanding of both fields and set a better context for collaboration."

Mercè Graell-Colas