

Collective Creativity

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Advances in technology and in the evolution of human-centered design practices are beginning to expose a shift in focus from individual to collective creativity—a new role for designers as creators of scaffolds or infrastructures upon which nondesigners can express their creativity. Elizabeth Sanders poses, then answers, a series of questions that explore the implications this shift holds for design education.

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What is creativity?

There are many different manifestations of creativity, but the common thread between them all is combining ideas in new ways.

According to Arthur Koestler (1), the most-cited authority on creativity, every creative act involves *bisociation*, a process that brings together and combines previously unrelated ideas. He contrasts bisociation with association, saying that association refers to previously established connections among ideas but that isociation involves making entirely new connections among ideas. Koestler's definition addresses all forms of creativity, whether in art, science or humor.

What is collective creativity?

Collective creativity occurs when bisociation is shared by two or more people. We are beginning to see that collective creativity can be very powerful and can lead to more culturally relevant results than individual creativity does. This is what happens with really good collaboration based on teamwork.

Who is creative?

Everyone is creative. (2) Nondesigners, however, are not in the habit of using or expressing their creativity. Their creativity is likely to be latent. In fact, ordinary people have a reputation amongst designers and marketers of not having any creativity at all. During product development, they are typically limited to focusgroup situations. How can we expect anyone to be creative in a traditional focusgroup situation? Very few people can produce creative results under those conditions.

All people have a wellspring of creativity when it comes to experiences they care about, such as home, hobbies, friends, etc. And with the advent of new forms of communication, people today are becoming more demanding "consumers." They are in the position now to be participants—even idea-generators—in the design development process, and they know this.

Who should practice collective creativity and why?

All people who touch and are touched by the "product" that is being designed should play a role in collective creativity. (By "product" I mean products, interfaces, spaces, etc.) These people fall into two main groups: "makers" and "users." "Makers" include all the members of development teams from disciplines such as marketing, engineering and design. "Users" include people who shop for, buy and end up using the product.

Collective creativity is already being practiced in industry today by “makers.” In fact, most design firms sell their interdisciplinary product development experience. But this practice is still plagued by problems that emerge when the languages of interdisciplinary expertise come into play. More on that later.

The biggest opportunity for improving the quality of products that we design today is to practice collective creativity with “users.” Others agree. Design critic Rick Poyner has argued that “since design is something fundamental to being human, it can’t be left solely in the hands of designated practitioners.” (3)

Architect Christopher Alexander writes “People need and have a right to determine and shape their own environment. . . . They are the only ones who know in a profound way what they need Good architecture can only come from wholehearted involvement of the users in the shaping of their buildings and streets.” (4)

Why is collective creativity important?

Collective creativity, when practiced with “users” in the design development process, can result in useful and relevant innovation. This is important because useful and relevant innovation can be commercially successful at the same time as it is culturally beneficial. (5)

The shift from individual to collective levels in thinking and doing is occurring today in many domains. (6) We see this shift taking place especially today in the world of business. Design education needs to keep up with the shift to meet the challenges created by new levels of thought and action.

How can ordinary people play a role in collective creativity?

How can we invite ordinary people, whose creativity is probably latent, to join the design development process? First, we must learn to respect their latent creativity. Then, we need to provide them with experiences and tools so that they can exercise their creativity and participate directly in the design process.

There are two different experiences—ideation and expression—that we must provide for them to harness their latent creativity.

As Michele and Robert Root-Bernstein note in their study of creative genius, “Creative thinking in all fields occurs preverbally, before logic or linguistics comes into play, manifesting itself through emotions, intuitions, images and bodily feelings. The resulting ideas can be translated into one or more formal systems of communication such as words, equations, pictures or music or dance only after they are sufficiently developed in their prelogical forms.” (7)

I will use *ideation* to refer to the preverbal idea stage and *expression* to refer to the translation of those ideas into formal systems of communication.

How do we teach designers to create the tools that will elicit creative thinking from ordinary people?

First, design students must learn to respect the latent creativity of users. This can only be learned in a hands-on manner—i.e., in a project-based course centered on a real world project. It works best when the users come from a different lifestyle/lifestage from the designers—e.g., undergraduate design students and senior citizens. Learning to respect the creativity of users usually happens very quickly with a hands-on approach.

Teaching design students to create the experiences and tools with which end-users can then exercise *their* creativity is a much more challenging process. I present below an approach that we have been using at SonicRim to help our

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clients develop products from a human-centered perspective. I have been teaching this approach to design students at Ohio State University for a number of years with exciting results. Students who have had more than one opportunity to use the approach in real world projects are doing human-centered design at the undergraduate level.

We give the participants diaries or workbooks to guide them in daily self-documentation of their thoughts, feelings and ideas about the experience being investigated.

To harness the creativity of ordinary people, we need to provide them with experiences that support first ideation then expression. Here is the four-step plan that we use:

1. Immersion into the experience
2. Activation of feelings and memories about the experience
3. Dreaming about the future
4. Bisociation and expression of new ideas relating to the future experience

According to Koestler, (8) bisociation only occurs when the person has been thoroughly involved in the problem or situation for a long time. Therefore, the *immersion* step lasts from one to several weeks and takes place in a natural context, usually the participant's home or place of work. We give the participants diaries or workbooks to guide them in daily self-documentation of their thoughts, feelings and ideas about the experience being investigated. We may also ask them to observe and document their current behavior through photographs or videos of their experience. We will typically observe and document the experience situation ourselves, as well.

Tools for immersion: A diary guides people's observations of their own behavior over time. They reflect on the situation every day and come to the participatory session well prepared to engage in creative exercises. (9)

The next three steps need to take place in face-to-face meetings, either individually or in groups. It is best to have these meetings in the users' natural environment since people will be more comfortable there. First we engage the people in one or more "exercises" with "toolkits" that have been designed to evoke and activate related memories and feelings. The toolkits are predominantly visual. Some examples are included in the next section.

Koestler also emphasizes the importance of dreams. He says that dreaming involves bisociation at an unconscious level. So we typically invite users to participate in an exercise that encourages them to dream about their future ideal experiences. Again, the research tools used for this exercise (shown below) have many visual components.

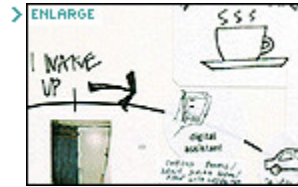
In the final bisociation and expression step, we invite users to express the ideas they have and talk about in the remembering, feeling and dreaming exercises. This is the most exciting part. We have seen people express many completely new ideas for products within a few minutes. The toolkits that we use for this final step are deliberately abstract and ambiguous as you can see below.



Tools for immersion. Microsoft, 2000

What do these tools look like?

Tools for remembering: The “Day-in-My-Life” exercise helps people record and reflect on their daily activities.



ENLARGE
Tools for remembering. ACCO Brands, 1999

Tools for feeling: “Image Collaging” is especially effective for evoking people’s emotional responses from people.



ENLARGE
Tools for feeling. Medical Surgical Market Research Group Conference, Cincinnati, Ohio, 1999

Tools for dreaming: The abstract components in the “Ideal Mapping” toolkit encourage people to project and to communicate their unfulfilled needs at home and at work.



ENLARGE
Tools for dreaming. Steelcase, 1999

Tools for bisociation and for the expression of ideas: Three-dimensional “Velcro-modeling” quickly elicits new product ideas from strategy game players.



ENLARGE
Tools for bisociation and for the expression of ideas. Microsoft, 2000.

Tools for bisociation and for the expression of ideas: Two-dimensional “Interaction Modeling” elicits new ideas in communication.



ENLARGE
Tools for bisociation and for the expression of ideas. Thompson Multimedia, 2001

When should we begin educating designers about creating and using these tools?

Designers should learn to create the tools of collective creativity and use them with ordinary people very early in their design training—hopefully before the midpoint of their design education. The experience can change their outlook on design. Ben Halsow, a student in the Department of Industrial, Interior and Visual Communications Design at Ohio State University explains, “Before I learned about participatory design, I had a very self-centered design process. I just thought I was smart enough to figure out what everybody would do or say. Or that they would just have to live with what I came up with. Then I realized that it is more challenging to actually sculpt a space around people’s needs, wants, desires and feelings than to just make something look pretty.”

What does all this have to do with interaction design education?

Interaction design is at the center of the new design space that has emerged in response to new communication technologies. It is a space where information surpasses form in importance. There is considerable debate about who should practice interaction design and how it should be done. Many practitioners claim they are “designing experiences” for people. But this is a myopic perspective. Experience is a subjective phenomenon. You can’t design experience. Experience is in people.

Collective creativity and user participation are a much-needed antidote to interaction design’s preoccupation with “Experience Design.” **If you think of products, interfaces and spaces as being scaffolds on which ordinary people can create their own experiences, the design challenge changes.**

What will be the role of designers in this new design space? They will learn how to access and understand the dreams of ordinary people to create scaffolds that help people realize their dreams. Designers will transform from being designers of “stuff” to being the builders of scaffolds for experiencing. And ordinary people will begin to use and express their latent creativity.

What’s next?

From many years of using visual participatory tools with users, we see a new language of experience emerging. We have used these tools with “makers” and found that the language of experience also helps them communicate with each other in a common language.

Exploration of a language that can be used equally well by “makers” and “users” is a fruitful area for graduate study in design.

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Notes

- (1) Koestler, A., *The Act of Creation* (London: Hutchinson & Co, 1964).
- (2) Bohm, D., *On Creativity* (London and New York: Routledge, 1998).
- (3) Poyner, R. < <http://www.creativepro.com/story/feature/13424-2.html> >.
- (4) Alexander, C. < <http://www.patternlanguage.com> >.
- (5) Rifkin, J., *The Age of Access: The New Culture of Hypercapitalism Where All of Life is a Paid-for Experience* (New York: Tarcher/Putnam, 2000).

(6) Ray, P.H. and Anderson, S.R., *The Cultural Creatives: How 50 Million People are Changing the World*. (New York: Harmony Books, 2000).

(7) Root-Bernstein, R. and Root-Bernstein, M., *Sparks of Genius: The 13 Thinking Tools of the World's Most Creative People* (New York: Houghton-Mifflin, 1999).

(8) Koestler, op cit.

(9) The illustrations for the tools, beginning with the tools for immersion, are drawn from client case studies from 1999-2001 including Microsoft, ACCO brands, a participatory workshop for the Medical Surgical Market Research Group Conference, Steelcase and Thomson Media.

📌 Also See

Gamez, G., *Creativity: How to Catch Lightning in a Bottle*. (Los Angeles, California: Peak Publications, 1996).

Gardner, H., *Frames of Mind: The Theory of Multiple Intelligences* (Basic Books, 1983).

Kelly, K. *New Rules for the New Economy* (New York: Viking, 1998).

Sanders, E. B.-N., "Generative Tools for CoDesigning" in Scrivener, Ball and Woodcock, eds. *Collaborative Design* (London Limited: Springer-Verlag, 2000).

📌 **Liz Sanders** is president of SonicRim, where she conducts generative search and research activities across many different industries. She is a pioneer in the use of participatory methods in designing and branding consumer and office products, systems, interfaces and spaces. Sanders' numerous design awards, patents, publications and worldwide presentations have established her as a leader in the field of design research.

Her client relationships have included 3M, AT&T, Apple, Baxter, Blockbuster Entertainment, Ciba Corning Diagnostics, Coca Cola, Compaq, Hasbro, IBM, Iomega, Kodak, Microsoft, Motorola, Procter & Gamble, Siemens, Steelcase, Texas Instruments, Thermos, Thomson Consumer Electronics, Toro and Xerox.

Sanders serves as an adjunct faculty member both in the Department of Industrial, Interior and Visual Communication Design and in the Industrial and Systems Engineering Department at Ohio State University in Columbus. She is also an advisory board member of the School of Design at Carnegie Mellon University.

Sanders graduated Phi Beta Kappa from Miami University in Oxford, Ohio with degrees in psychology and anthropology. She received a Ph.D. in Experimental and Quantitative Psychology from Ohio State University.