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4 Steps to Successful Brainstorming

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Almost everybody does brainstorming wrong, Ralph Keeney says, and turns it into an enormous waste of time. He wants to tell you how to do it right.

An emeritus professor at Duke's Fuqua School of Business and a consultant to such diverse organizations as the Department of Energy and, just last month, a German power company with $40 billion in revenues, Keeney has devoted his career to a discipline called "decision science," helping companies and government agencies bring focus and rigor to their decision-making process so that they can waste less time spinning their wheels and instead get clear on their objectives before they try to meet their goals. Thirteen years ago he penned a book, still in print, called *Value-Focused Thinking: A Path to Creative Decision-Making*, which says that most corporate executives put the cart before the horse. Instead of parsing the objectives they hope to achieve, they direct their energy at coming up with solutions to broadly-stated problems.

"When most people do brainstorming, they run all over the place and think outside the box," he says. "I think they should think *inside* the box—the right-sided box."

His latest paper, published in the December issue of a journal called Decision Analysis, spells out what he believes is the right approach. In Germany for instance, the company he counseled is trying to cope with a vastly changed energy landscape, where nuclear power will be banned as of 2022, coal emissions restricted, and by 2020 at least 20% of the company's energy

must come from non-carbon-emitting sources. “The company has to change phenomenally in order to exist 10 years out,” he says.

Instead of packing executives into a conference room and brainstorming solutions, Keeney met for one hour each with 19 top people, including the CEO. He pressed them on what they thought the company’s objectives were. Then he compiled a list of 450 things the executives wanted to achieve. He took the hundreds of objectives and boiled them down to 40 major goals, with 200 subsets. Why? Because, as his paper says, before you brainstorm, it’s essential to go through the process of analyzing and focusing on objectives. Here are Keeney’s four steps to effective brainstorming:

1. Lay out the problem you want to solve.

This may be easier said than done. Keeney describes a doctoral student who is at sea while trying to come up with a dissertation topic and advisor. The student grasps for ideas with only the vaguest idea of a goal, stated as negatives rather than positives. “I don’t think I could do it,” “it is not interesting to me,” “it seems too hard,” and “it would be too time consuming.” Then finally someone suggests an idea that doesn’t have any of those negatives. The doctoral student grabs the topic. But Keeney says this is a poor way to make a major decision. Instead the student should keep pushing until they come up with at least five more alternatives, and then, considering all those, “identify your

objectives for your dissertation, evaluate the alternatives and select the best." It will be well worth the effort.

2. Identify the objectives of a possible solution.

This is what Keeney did for the German energy company and what he's done for several government agencies, including the Department of Homeland Security and the energy department. It's not easy and it takes time but if you can approach your goals critically and hone in on what you want to achieve, your brainstorming session will be much more effective.

Keeney offers a great example of this process. David Kelley, the founder of renowned design firm IDEO, wanted to design a product that would enable cyclists to transport and drink coffee while they were riding. A couple of ways to describe what he wanted to design: "spill-proof coffee cup lids," or "bicycle cup holders." But a much better description is the following objective: "helping bike commuters to drink coffee without spilling it or burning their tongues." Keeney likes this statement because it clearly lays out IDEO's objectives, to help bike commuters 1) drink coffee, 2) avoid spills, 3) not burn their tongues. He even contributes a few objectives of his own: avoid distractions while biking, don't contribute to accidents, keep the coffee hot and minimize costs. Going into that much detail *before* brainstorming about ways to design the cup holder makes IDEO much more likely to succeed.

3. Try to generate solutions individually.

Before heading into a group brainstorming session, organizations should insist that staffers first try to come up with their own solutions. One problem with group brainstorming is that when we hear someone else's solution to a problem, we tend to see it as what Keeney calls an "anchor." In other words, we get stuck on that objective and potential solution to the exclusion of other goals. For instance, when Keeney was consulting with a cell phone maker years ago, the company had numerous objectives. It wanted to produce a lightweight phone that also had GPS capabilities (Keeney did this consulting gig some time ago, but he insists the example remains illustrative). When company executives got together to brainstorm ideas about how to build a better phone, one person brought up the issue of weight. Suddenly everyone became fixated on that idea and forgot about their other objectives. Coming into a meeting with potential solutions reduces the risk that participants will get bogged down on one objective.

4. Once you have gotten clear on your problems, your objectives and your personal solutions to the problems, work as a group.

Though he acknowledges that it's a challenge not to "anchor" on one solution in a brainstorming session, Keeney believes that if participants have done their homework, clarifying the problem, identifying objectives, and individually trying to come up with solutions, a brainstorming session can be extremely productive.

At the end of the paper, he describes a 2008 workshop he held to try to come up with ways to improve evacuations in large buildings in case of a terrorist attack, based on a recommendation from the National Institute of Standards and Technology. Keeney brainstormed for two-and-a-half days with 30 people with expertise in everything from firefighting and building codes to handicapped people and human behavior. The result, after going through Keeney's four-step process: a list of 300 new alternative ways to speed evacuation. Then the participants evaluated the many ideas, which included using cell phone alarms to guide people to exits and building linked sky bridges on every fifth floor. The hope, of course, is that these solutions will never be tested. But Keeney's brainstorming method helped the group find effective suggestions.

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In February 2018, I took on a new job managing and writing Forbes' education coverage. I'd spent the previous two years on the Entrepreneurs team, following six... **Read More**