

Great Minds on Creativity and Innovation (V 2.0)

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Imp's Report: Manual of Strategies for Discovery

"What do breakthrough scientists do that average scientists don't? What makes them different? I'm convinced that, famous scientist aren't any more intelligent than those who are not famous. I'm convinced that successful ones aren't right any more often than their colleagues, either. I believe that the architects of science are simply more curious, more iconoclastic, more irreverent, more persistent, readier to make detours, and willing to tackle bigger and more fundamental problems. Most important, they possess intellectual courage and daring. They work at the edge of their competence, their reach exceeds their grasp. As they stretch themselves, they stretch science. Thus, they not only succeed more often and out of proportion; they fail more often and on the same scale."

Charles F. Kettering

"I have never heard of anyone stumbling on to something sitting down. Once you begin to act, you make things happen. The more ways you "twist the lion's tail," to use Francis Bacon's term, the more you'll make it roar."

Benjamin Disraeli

"Court serendipity by being eccentric. Your probability of inventing something different increases as your experience, hobbies, skills, knowledge, philosophy, and goals become increasingly unusual."

Linus Pauling

"Try many things. The search for scientific problems must be broad. Those who look in one place find one thing."

Jonas Salk

"Do what makes your heart leap. Listening to some scientist, one gets the impression that finding a research problem is like falling in love or going on an adventure."

"Scientists of any age who want to make important discoveries must study important problems."

Peter Medawar

"If an experiment does not hold out the possibility of causing one to revise one's views it's hard to see why it should be done at all."

Albert Einstein

"To raise new questions, new possibilities or, to regard old problems from a new angle, requires creative imagination."

"If the data doesn't fit the theory, ignore the data. (a comment to Heisenberg)"

Albert Szent-Gyorgyi

"Renew old knowledge. Another source of rich ideas is previously plowed fields now abandoned."

Francis Bacon

"Truth comes from error more rapidly than out of confusion."

Max Delbruck

"Be sloppy enough that something unexpected happens but not so sloppy that you can't tell what happened."

Lord Dainton

"Cherchez le paradoxe. A common error among researchers is to ignore things that don't make sense."

Niels Bohr

"When the great innovation appears, it will most certainly be in a muddled, incomplete form. To the discoverer himself it will be only half-understood; to everyone else it will be a mystery. For any speculation which does not at first glance look crazy, there is no hope."

"No paradox, no progress"

Thomas S. Kuhn

"Revolutions follow the recognition of anomalies."

Enrico Fermi

"Never try to solve a problem until you can guess the answer."

Charles Darwin

"Without speculation there is no good and original observation."

Aldous Huxley

"Every day some beautiful theory is destroyed by harsh reality."

Svante (August) Arrhenius

"Don't undertake a project unless it is important and nearly impossible. If it is manifestly important then you don't have to worry about its significance."

Max Planck

"Do your own thinking. Accept nothing until you have satisfied yourself that there is no other way to think about it."

James D. Watson

"It was certainly better to imagine myself becoming famous than maturing into a stifled academic who had never risked a thought."

Unknown

Don't be afraid to re-invent the wheel.