

Statistics Training Sharpens Skills

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Training in statistics (including all statistics-related disciplines) is one of the best ways to sharpen your analytical skills. What is analytical skill? Wikipedia defines it as the ability to visualize, articulate, solve complex problems and concepts, and make decisions that make sense based on available information. Such skills include demonstration of the ability to apply logical thinking to gathering and analyzing information, designing and testing solutions to problems, and formulating plans.

Statistics includes methodology, procedure, and techniques used to formulate and simplify complex problems; design experiments; and collect, process, and analyze data to make inferences and research decisions in the face of uncertainty. There are many correlations between training in statistics and developing analytical skills.

Why are analytical skills important? Experts think they are mission critical in career development. In an article by Randall S. Hansen and Katharine Hansen titled "What Do Employers Really Want? Top Skills and Values Employers Seek from Job-Seekers," analytical/research skills are ranked second only to communication skills (see www.quintcareers.com/job_skills_values.html). In 2007, a financial leadership council composed of executives from industry, academia, and professional associations predicted that job candidates with analytical skills will be in high demand (see www.financialleadershipcouncil.com).

It is hardly possible to find a profession that does not require analytical skills. Lawyers and

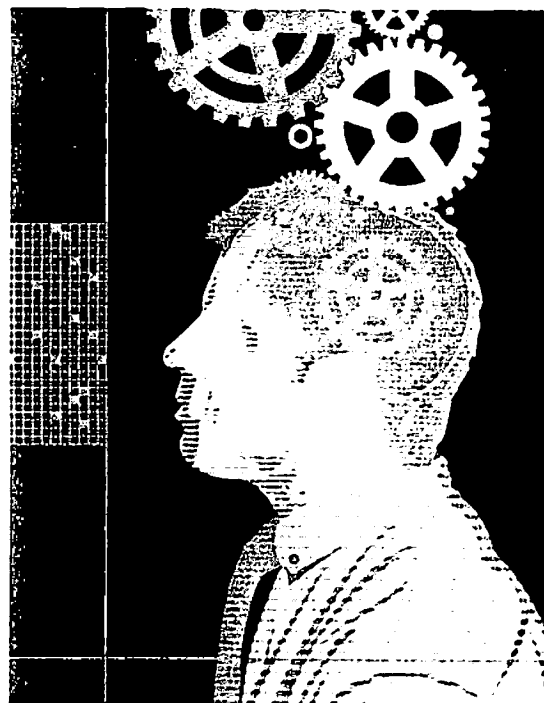
politicians use their analytical skills to lay out arguments. Audit professionals use their problem-solving abilities to understand the "why" behind the data. Physicians use their logical thinking to gather and analyze information and to make decisions. There is no question that analytical skills are essential to many professions.

Analytical Thinking: A Four-Step Process

How can training in statistics improve your analytical skills? Let's use analytical thinking, a core analytical skill, as an example. Analytical thinking is reflected in a four-step process: hypothesis formulation, data collection, analysis, and inference. This process symbolizes how statistics is taught as a discipline.

Hypothesis formulation teaches you how to simplify complex problems, define the most relevant problems clearly, and formulate hypotheses. Data collection teaches you how to plan what you need, look where you need to dig, and filter information required for proving or disproving hypotheses. Analysis teaches you the deliberate process of breaking a problem down into its parts. By understanding its components and how they fit together, you understand the whole better. Finally, inference guides you through the process of deriving a logical conclusion from the outcome of hypothesis testing. It requires you to assess multiple perspectives and develop an effective solution.

This four-step analytical thinking process strengthens your problemsolving skills and can be



applied across the business, education, health, science, and technology fields. For example, you need to create proposals that are subject to review. Now you can use your data analysis skills and have confidence that you have a proven methodology; a solid plan; and a strong, data-driven assessment for your proposals.

How Can I Be Trained in Statistics?

Many institutions offer professional degrees in statistics or training courses for nonstatisticians. The perception that one trained in statistics has to remain a statistician is no longer compelling, as people trained in statistics continue to pursue other professions. ■