

General Knowledge

Intellectual competence and success in life depend on knowing a lot of facts.

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Psychologists have discovered that knowing more makes you better able to learn new things, and better able to think critically. That is, knowledge enables you to learn and to think.

But why does more knowledge make you smarter? In a brilliant experiment, Keith Stanovich, the distinguished Canadian reading researcher, showed that when two people have the same level and kind of IQ, the person who has more general knowledge will learn faster and function more competently than the person who has less general knowledge.

North Americans tend to assume that academic competence is mainly a product of innate ability. Even when we are willing to criticize the idea of IQ in favour of such notions as multiple intelligences, the very prominence we give the word 'intelligence' still accords too much importance to innate ability, as compared with effort and knowledge.

The average differences in innate abilities are far less pronounced than the average differences in achieved abilities produced by knowledge and effort. It turns out that creativity is not spontaneous, as the romantics thought, but requires long study and mastery-knowledge. Even the most talented person needs about ten years of effort to reach an expert level, and creativity usually takes even longer. For instance, scientists have shown that having a genius for mental arithmetic turns out to be based less on innate talent than on knowledge and intensive practice. Knowledge and practice — these are the things that make you smart.

Why do experts learn new things faster and better than novices? Not because experts have more innate talent, but because they know more. And what they know has become second nature

to them, and frees their minds to focus on higher-level aspects of a problem.

The research literature is very clear on this point. Highly-skilled intellectual competence comes after, not before, you know a lot of 'mere facts.' First facts, then facility. It's the only way for us to get deep understanding and attain all those higher-order thinking skills which are so widely praised by educational experts and so wrongly contrasted with 'mere facts.'

“Probably the most dramatic illustrations of the knowledge-bound character of human skills came from some remarkable experiments conducted by Adriaan de Groot.... In one experiment, de Groot displayed for five to ten seconds a chess position from an actual game in which 25 pieces were left on the board. The subjects were asked to reproduce the position from memory. Grand masters performed this feat with 100 percent accuracy, masters with 90 percent accuracy. Weaker players were lucky if they could correctly place five or six pieces.

“Then de Groot varied the conditions of his experiment in one respect. Instead of placing the 25 pieces in positions from an actual game, he placed them on the board randomly. The results were unexpected. All his subjects — grand masters, masters, class A players and class B players — performed the same as novices did, placing only five or six pieces correctly. This experiment has been duplicated in several different laboratories, and structurally in several other fields, including algebra, physics, and medicine, always with the same striking results.”

(Cultural Literacy, p. 61)

Experts' knowledge has become so integrated and 'chunked' that their conscious minds can focus on a small number of key features. Edison's comment that "Genius is one percent

inspiration and 99 percent perspiration' holds even for the most talented, though in some cases, Edison's estimate may be off by a few percentage points.

The U.S. armed forces gives every recruit a test of general knowledge. Given to millions of people over the years, this test has offered scientists a huge field of research. For instance, there are several studies on whether a higher score on the test makes one a more competent soldier. The answer is emphatically yes, whether the soldier's job is in electronics or in just being a foot soldier.

There's an economic twist to this story. That same army test was used in a big sociological study called 'The Longitudinal Study of Youth.' This on-going study has found the same thing the army found about general knowledge and life competence. The more you know, the better you do in life.

This has enormous implications for social justice and education, since the scientists found that general knowledge correlates with annual income. And furthermore, it correlates with annual income regardless of which racial or ethnic group you come from. Knowledge makes people competent regardless of race, class or ethnicity. It is the great social equalizer.

Since knowledge is the great equalizer, the schools have a huge opportunity and responsibility to provide more equal life chances for all students, no matter where they come from. Teachers who arm their students with a sturdy framework of general knowledge are in the vanguard of the new civil rights frontier. That frontier is knowledge.

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