

It Doesn't Take A Rocket Scientist

The old cliché, “it doesn't take a rocket scientist,” is subscribed to by many personnel managers who believe that tests of intelligence (or cognitive ability as personnel psychologists like to call it) is one of the least useful tools for selecting effective employees. Surveys have found that a majority of personnel psychologists rank either the interview or assessment of experience as the best predictors of job success and intelligence tests as one of the poorest when just the opposite is true. John Hunter of Michigan State University and Frank Schmidt of University of Iowa, the premier researchers in this field, have reviewed the past 85 years of research dealing with personnel selection and have concluded that tests of intelligence are at the top of the list of valid predictors while the traditional interview is near the bottom, beating out graphology.

Why are personnel managers, the experts we rely on to identify talented potential employees, so reluctant to use intelligence tests as a part of their toolbox? There are several reasons. First, it could lead to sticky legal issues. Federal regulations going back to the 1960s have made it risky to use any test that results in the rejection of a disproportionate percentage of minority applicants. And as a group, minorities often have lower average scores than majority group members on tests of intelligence. For many years the assumption was that this difference reflected bias in the tests but after several decades of research, the evidence is clear that any bias that does exist probably lies in society's failure to prepare minorities to take such tests; not the tests themselves. It is not the messenger that needs to be slain. The recent Ricci case, in which the Supreme Court ruled that it was illegal for New Haven to throw out the

results of a test used to promote firefighters because no minorities received a qualifying score will most likely reduce the legal risks associated with using intelligence tests.

Second, most of us, not just personnel managers, have qualms about placing too much importance on intelligence. Who hasn't described someone with words such as, "he may be book smart but he has no common sense." The popularity of "emotional intelligence" in recent years has fed this stereotype. I have heard it said many times, "she may be bright, but she'll never make it because she has no people skills." Perhaps we are skeptical about the role of intelligence because virtually all of us, at some point in our lives, have lost out because others received higher scores on an intelligence test than we did. Perhaps we didn't get into our first choice of college because our SAT scores weren't off the charts. Perhaps we didn't get the certification to be a professional engineer, real estate agent, contractor, or any of the some 200 other occupations that require passing a licensing exam in most states, because our score on a test wasn't high enough—even though we know perfectly well we are fully qualified for the job. We just don't like to believe that answering a few more questions correctly on a test has any meaningful implications regarding our potential to be successful.

Despite any qualms we may have about the importance of intelligence, the evidence is clear. Tests of intelligence provide the best single predictor of job success. Period.

The usual way of expressing the validity of a test is with a statistic called a correlation coefficient. It can range from -1.00 to +1.00, and the closer it is to +1.00, the stronger the relationship between test scores and job success. When one looks at the test validity of various selection tools, the differences in correlation coefficients may not seem so impressive. For instance, the validity of intelligence tests is .51 while for the traditional interview, it is .38. This

may not seem like all that much of a difference but Schmidt and Hunter have presented convincing evidence that the consequences of using a less valid method of selection when a more valid one is available can be profound. In the context of “utility theory” they demonstrate that a large company who hires 100 skilled workers per year can expect an economic benefit of several million dollars per year by using intelligence tests. If one considers the benefits over the tenure of the employee, the numbers become truly staggering. As Schmidt and Hunter point out, using the most valid selection tools available can make the difference between bankruptcy and economic success.

While Schmidt and Hunter present compelling evidence that intelligence tests are a valid predictor of job success for all occupations, they recognize that these tests are not equally valid for all jobs. They divide occupations into three categories, based on the level of job complexity. Intelligence tests work best with the most complex occupations, including doctors, engineers, computer programmers, and the like. The benefits of these tests with the least complex occupations, such as truck driver, routine factory or clerical work, are more modest. And of course, the benefits of using an IQ test for jobs of moderate complexity (e.g. carpenter, electrician, auto mechanic) fall between these extremes. At some level we all know this. Who wouldn't prefer to take their car to a brightest mechanic we know for repairs?

Schmidt and Hunter have coined the term “investment theory” to explain why intelligence makes such an important difference. This theory is based on the observation that intelligence predicts job success because intelligence is associated with more rapid learning and continued learning. Much of this evidence comes from the military where large numbers of people enter every year and are required to complete training programs. Trainees with high

test scores master the material sooner and they are more likely to continue learning well after their training is complete. So, in short, bright people know more of what they need to know to be successful in their jobs.

The “investment” idea refers to the preparation people engage in to prepare themselves for a particular occupation. Let’s consider the job of auto mechanic to illustrate. Anyone who wanted to get into this field “invested” time and energy to learn about it. They probably took classes in high school or a technical school. They most likely read relevant magazines and manuals. Perhaps their dad or older brother showed them how to complete various repairs. In other words, they all invested their time into activities that provided the opportunity to learn about auto mechanics. And a bright person would benefit more from these experiences than his dim-witted counterpart. Not only that, the bright person would most likely continue to make investments so he would keep on learning longer than his not-so-bright colleague.

One last thought – Schmidt and Hunter have argued that personnel managers often underestimate the usefulness of intelligence tests because of the tendency to evaluate employees on “job citizenship” rather than “job ability.” Everyone loves a good citizen—employees and colleagues who are easy to get along with and who never rock the boat, even if they are not the most productive people in the group. Indeed, there is evidence that managers find it difficult to look beyond citizenship to see productivity. So, it is wise to try to keep the two qualities separate. It is certainly reasonable for personnel managers to value citizenship, but they should look beyond these qualities to ensure they are selecting the most productive workers as well.

If you are interested in learning what intelligence tests can do for the productivity of your organization, please give our General Cognitive Ability test a try. Developed by Dr. Louis Janda, it has been found to be strongly related to the Wechsler Adult Intelligence Scale—the gold standard of IQ tests—and to predict college students' grade point averages and SAT scores.

We think you will be pleasantly surprised by the results.