

Sternbergs triarchic theory of human intelligence



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Intelligence is one of the most important aspects of human life and what differentiates us from the rest of the species at great length. Intelligence can take various variables and can derive from everywhere. More specifically, in this paper we will discuss Sternberg's Triarchic Theory of Human Intelligence, (1986) who separated intelligence into three divisions, analytical, creative, and practical, but first we will make a short reference to other important theories of intelligence.

One of the most well known theories of Intelligence is Gardner's Theory of Multiple Intelligences, (1983) who is an American developmental psychologist. According to his theory, there are 8 different areas from which people can derive their intelligence. There are the linguistic logical-mathematical, musical, spatial, bodily-kinesthetic, naturalistic, interpersonal, and intrapersonal.

In addition, Spearman, (1904) a psychometrician, introduced the two factor theory with the g factor, basically "general" intelligence, where all variations of intelligence tests scores can be explained by two factors, the general, the specific or even the error variable.

Plus, Binet, a psychologist, who invented the first intelligence test in 1908, the common IQ test which we are all aware of. He developed it so that to be able to measure students intelligence, and to help those who needed assistance in dealing with their school curriculum.

Finally, Cattell, (1971) a British and American psychologist, suggested the existence of fluid and crystallized intelligences to understand, identify and explain human cognitive ability, and created the Culture Fair Intelligence

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Test to reduce the bias of written language and cultural background in intelligence testing. There is a correlation among fluid and crystallized intelligence, and many IQ tests try to measure these varieties. For example, the Wechsler Adult Intelligence Scale (WAIS) measures fluid intelligence on the performance scale and crystallized intelligence on the verbal scale.

Have you ever wondered what really makes you intelligent, or which components consist in your intelligence formation? To begin with, is very difficult to define intelligence because is too broad and varies from people to people. It, also, depends on each one's cultural setting, personality, cognition, and adaptive skills. For these reasons, many psychologists find it very difficult to identify intelligence because there is not only a single way to explain it, and we can only say that " we have, no doubt, a rough and ready idea of what we mean by intelligence and other cognate terms."

(Mackintosh, (2000), IQ and Intelligence, University Oxford Press, New York, p. 2)

The theory of intelligence that we are most interested in, is Sternberg's Triarchic Theory of Human Intelligence. Robert J. Sternberg was born in 1949 and is an American psychologist and a psychometrician. He conducted research to determine mental functions, different ways of thinking, and how to modify cognition. Based on his studies he proposed the Triarchic Theory of Human Intelligence and divided intelligence into three abilities, the analytical, creative, and practical.

According to Sternberg's own words, " you need creative skills to come up with ideas, you need analytical abilities to know whether they're good ideas

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to evaluate the ideas, and you need practical abilities to make your ideas work and to persuade other people that your ideas are worth listening to," to be successfully intelligent.[1]

Firstly, the analytical or componential ability, involves analyzing, evaluating, critiquing, comparing and contrasting ideas. By being qualified in these skills, an individual is great in information-processing, and problem solving skills, but by having only this ability a person lacks in expanding his/hers creativity and adapt in situations via unique ideas. (Sternberg, R. J. (1985) Beyond IQ: A Triarchic Theory of Human Intelligence, Cambridge University Press)

Secondly, the creative or experimental ability involves creating, exploring, discovering, inventing, imagining and supposing ideas. It's partially a matter of easily making decisions depending on the situation, and finding effective ways to adjust your personal experiences, your culture and available means in various environments. (Sternberg, R. J. (1985) Beyond IQ: A Triarchic Theory of Human Intelligence, Cambridge University Press)

Thirdly, the practical or contextual ability involves applying, using, and putting acquired knowledge into practice. This ability can be essential in coping with daily tasks. It includes tasks such as finding practical solutions in problems, mathematical problems, or planning and figuring out directions in terms of which is the easiest and fastest way to follow to get from point A to B. (Sternberg, R. J. (1985) Beyond IQ: A Triarchic Theory of Human Intelligence, Cambridge University Press)

The individuals who obtain all three variations of abilities in an adequate or high level, they have increasing possibilities of reaching successful

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intelligence. Basically, successful intelligence involves combining the appropriate amount of these abilities, which vary and have different significance for each individual, within their socio-cultural context. Plus, by becoming aware of their strengths and conserving them, or even recognize their limitations and make efforts to overcome them. Trying to make a wise usage and keep a balance among analytical, creative, and practical abilities is the main objective that will lead individuals in attaining successful intelligence. (Flanagan and Harrison, (2005), Contemporary Intellectual Assessment, Guilford Press, p. 104)

Plus, he criticized IQ tests, saying they are “ convenient partial operationalizations of the construct of intelligence, and nothing more. They do not provide the kind of measurement of intelligence, that tape measures provides of height.” (2005)

Most intelligence tests focus on mental abilities such as vocabulary, comprehension, memory, and problem-solving. By observing these behaviors, that seem to be correlated with intelligence, psychologists try to understanding what is and what makes intelligence. This shows only one part of intelligence, which is only seen in people who are educated in schools. In contrast, individuals who score poorly on intelligence tests are creative or educated in “ the school of life” and have a very good ability to adapt and shape their environment.

Based on the above, he developed the Sternberg’s Triarchic Abilities Test which is a measurement scale (1993) to appraise analytical, practical, and creative skills using multiple choice questions, with three types of item

content: verbal, quantitative, and figural. As a result, the STAT scale is composed of nine subscales: analytical-verbal (Understand meaning from certain context), analytical-quantitative (figuring out which number follows), analytical-figural (complete a puzzle), practical-verbal (everyday reasoning), practical-quantitative (everyday mathematics), practical-figural (route planning), creative-verbal (verbal analogies), creative-quantitative (novel number operations), and creative-figural (novel number series). (Sternberg, R. J., et al. 2000 Practical intelligence in everyday life, pp. 96-100)

Moreover, many research studies have been carried out to test certain predictions of the theory and to investigate the validity of the triarchic theory. In one validation study, they used the Sternberg's Triarchic Abilities Test (STAT) 326 high school students were tested for their analytical, creative and practical abilities throughout multiple-choice verbal, quantitative and figural items, as well as essay problem solving. The factor analysis supported the triarchic theory, but correlations across analytical, creative, and practical abilities were insignificant due to multiple-choice testing in contrast with essay problem solving.

Afterwards, 199 of the participants were selected according to their triarchic patterns of ability. They were assessed as comparatively high in analytical abilities only, creative abilities only, practical abilities only, all three kinds of abilities, or in none of the three kinds of abilities. Then for four weeks they were taught an introduction to psychology course, based on either in memory, analytical thinking, or practical thinking skills. They were evaluated on these factors through homework, tests (multiple-choice and essay), and an independent project. It was found that participants who had been better

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matched to their triarchic pattern of abilities, when taught, did better than those who were mismatched.

In a recent study by Sternberg and the Rainbow Project Team (2002) they used an extended Scholastic Aptitude Test (SAT) test on 1015 students at 15 different institutions (13 colleges and 2 high schools). The goal was not to replace the SAT, but to develop tests that would enhance it to measure more skills, and to reduce the socially defined racial and ethnic differences typically found in scores on current standardized college entrance exams, such as the SAT. In addition to the given multiple-choice STAT tests, they used 3 additional measures for creative and practical skills. Results from the study supported the construct validity of the theory of successful intelligence and indicate possible use of the STAT as an asset to the SAT's.

Sternberg's theory has been criticized from the scientific perspective, mainly because it lacks empirical support. His ideas have been influenced from Gardner's theory, but also inspired Daniel Goleman to talk about emotional intelligence. All these concepts seem appealing and optimistic, but since we are dealing with psychology as an upcoming developing science, sustaining evidence are required to maintain legitimate generalizability and applicability.

In conclusion, Sternberg's triarchic theory of human intelligence aims at providing people the opportunity to understand and utilize their creative, analytical, and practical abilities. Based on results from research studies, by introducing the STAT test in education for student's evaluation, we will be able to collect information at a wider range, better results, and students will

be benefited. The triarchic theory needs even more research to increase validation and reliability, not only to diminished the criticisms it receives, but also to be introduced to a wider public domain so that to be applied and raise peoples successful intelligence.

DISCUSSION - PERSONAL OPINIONS

From our point of view, Sternberg's theory is very interesting due to the fact that the analytical, creative, and practical skills he proposed are being utilized by all human beings, consciously or unconsciously, and are ubiquitous in everyday life. The key to an effective use of this theory is to expand knowledge, and trying to find solutions to our problems by deriving information from these abilities, and also by depending on our strengths and improving our deficiencies. Of course, the environmental, sociocultural, and genetic factor play an important role in establishing individual's intelligence, but is very complicated to determine their exact contribution.

Besides practicing his theory on a daily basis, it also plays a significant role in the educational field, by giving students the opportunity of becoming better, gaining more knowledge, and improving their skills. According to the results of the Rainbow Project (2006), it enables children to capitalize their strengths, correct their weaknesses, and allows them to encode material in a variety of interesting ways. In all cases, students who were educated triarchically performed substantially in better ways than other students. Teaching triarchically is a superior technique that can be adapted by more educational systems.

Everybody is good in something. Being intelligent means being able to utilize your talent, whatever that is. Experts have a lot of theories about what constitutes intelligence, but we have formed our own. Intelligence is talent plus genes. Usually, people measure intelligence according to how many degrees one has, but according to experience is a mistake. For instance, my father never attended a university but he is a good writer and painter. He used to tell me his own most fascinating bedtime stories. As a hobby, I used to create my own, and then followed journalism, which requires creative writing, but my father is still way better than I will ever be. Up to this day he advises me and whenever a piece of mine is been published, he tells me how to improve it.

Finally, the triarchic theory is still in growth and yes it might need more scientific results to ensure its significance, but this does not prevent us from accepting it and trying to adapt it, both to reach successful intelligence as to improve our daily life.