Overview Of Intelligence Theories

Intelligence, according to IPFS, is defined as “a person's cognitive ability to learn. It is also associated with school performance, IQ, logic, abstract thought, self-awareness, emotional knowledge, memory, planning, creativity, and problem-solving” (IPFS, 2017). This in itself covers a vast area of what the true definition should be.

The debate of what intelligence is and how to measure it has been in question for over a century. Three of the many theorists of intelligence; Cattell-Horn-Carroll (CHC) model of cognitive abilities, Gardner’s multiple intelligences and Spearman ‘g’ and ‘s’ theories will be compared in this essay and applied to a case study of historical intelligence testing to explore the possibility of bias and discrimination at the time based on her physical and social development, and the impact of this on the outcome for the testee.

A 19th and 20th Century psychologist, Spearmen believed that there were two types of intelligence. “One type ‘g’ or general ability and the other ‘s’ which shows that of specific abilities.” (Macgregor, A. & Turner, 2015). Many tests that are available allow for specific testing to take place but very few allow for general ability to be tested. “if you want to know how a person performs on a ‘g’ task, then you could safely predict how that person would do on another ‘g’ task”(Macgregor, A. & Turner, 2015.) He believed there was a relationship between both ‘g’ and ‘s’ and he was able to show that you could approximate how a person would perform in any test using numerical calculations.

Whereas, Cattell-Horn- Carroll theory, an integration of two previously accepted models of human cognitive abilities: Cattell–Horn’s fluid and crystallized intelligence theory (Horn & Noll, 1997) and Carroll’s three-stratum theory (Schneider & McGrew, 2012). This theory looks at many abilities including:

- Cattell-Horn-Carroll Seven Cognitive Abilities (Cormier et al 2016)
- Stratum III
- (General) General Intelligence (g)
- Stratum II
- (Broad) Fluid reasoning (Gf)
- Comprehension-knowledge (Gc)
- Short-Term Memory (Gsm)
- Visual Processing (Gv)
- Auditory Processing (Ga)
- Long-Term Storage and Retrieval (Glr)
- Processing Speed (Gs)
- Stratum I

(Narrow) 69 Narrow Abilities found in data sets analysed by Carroll

Raymond Cattell believed that people have two abilities alongside their general ability; Crystallised intelligence – learned information and fluid intelligence – problem-solving. He stated that crystallised intelligence continues to develop throughout a person’s life whereas fluid

intelligence peaks and then begins to diminish as we grow older.

Similarly, Howard Gardner's model (1983) breaks intelligence down into eight areas: Linguistic, logical/mathematical, musical, visual/spatial, bodily-kinaesthetic, interpersonal, intrapersonal and naturalist. The theory of multiple intelligences has been criticised as listing talents rather than intelligences and although it looks at the broader range of specific skills it considers them to be all on an equal footing rather than placing greater importance on some. In Gardner's words, this qualification "ensur[es] that a human intelligence must be genuinely useful and important," which highlights an intelligence as an attribute (Helding 2009).

Cattell and Horn's theory support Spearmans idea that the 's' factor can actually improve a person's 'g' factor. Horn added several further abilities to this theory. Carroll formulated the three-levelled approach as we see today. This theory is particularly relevant to school psychologists for psychoeducational assessments, where it is used for aptitude and intelligence testing.

This brings us on to the more modern way of considering intelligence and the model that a great deal of psychometric testing is now based upon, the Cattell–Horn–Carroll (CHC) Theory. This will be the model which will be used as it gives us a greater understanding of human intelligence and the aspects that lie therein.

We have considered the theories of intelligence that may have been used during the previous assessment but it is also important to consider what other factors may have affected the results or indeed the test as a whole. Culture and race are two such factors. Coard (1971) stated that that "the vocabulary and style of all these IQ tests is white middle class. Many of the questions are capable of being answered by a white middle class boy, who, because of being white middle class, has the right background of experience with which to answer the questions regardless of his real intelligence. The black working class child, who has difference life experiences, finds great difficulty in answering many of the questions, even if he is very intelligent."

The other aspect to consider is the environmental influence of the significant stress that you were experiencing at home. Sternberg (1987) considers specific learning disabilities and cites his previous work with Spear (1986). They state that they consider a learning disability to be an, "intrinsic deficit, one not caused by (but perhaps exacerbated by) external factors such as poor teaching, environmental deprivation…or by other handicapping conditions, such as sensory impairment or emotional disturbance."

Thorndike (1949) warned about the variability in test outcomes due to factors outside the control of the test situation. Factors such as: the lasting general characteristics of the individual, the lasting specific characteristics of the individual, the temporary but general characteristics, the temporary and specific characteristics, the systematic or chance factors affecting the administration of the test or appraisal of the test performance, and the variance not otherwise accounted for (chance).

It is not just within the testing system that disparities are noticed, the negative culture skew in favour of the white middle classes within the education system has long been documented by sociologists. The Coleman Report of 1966 by James Coleman found that students from poor, predominantly non-white backgrounds began school with serious deficits, many of which could

not be reduced. Kerckhoff and Glennie (1999) further highlight this educational injustice by stating that in schooling “the rich get richer and the poor get poorer.”

In my view and opinion the client was tested prematurely and the use of an IQ test was inappropriate. Discussing this matter further with the client, a more holistic approach would have been more appropriate and would of benefited her. This case should stand as evidence against private testing which then has a negative implication on the client. When testing the whole client need to be taken into consideration by looking at schools reports, observations, teachers concerns and examples of their work. At the age of six, with a developmental delay, underlying social issues and emotional stress within your home life, it does not feel that there was the correct environment to test using a simple and isolated quantitative assessment. I do not feel that the initial testing gave a true picture of her ability as a human being and I feel that too narrow an aspect of your intelligence was considered.

Intelligence is not clear cut and general ability test may not highlight aspects of ability tests of which the client excels in. The client stated that she had achieved a great deal of success in her life and she should be proud of that as well as working on improving areas that may worry her.

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