

Canadian Native Intelligence Studies: A Brief Review

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Since the late 1920s, a portion of the research into Indian education in Canada has included measuring the intelligence of students using standardized tests. Consistent results and explanations of these results have evolved into a debate on the legitimacy surrounding the use of these tests among cultural groups for which they have not been normed. This review focuses on (a) the current debate on the nature of intelligence, (b) the present controversy on the use of standardized intelligence tests, (c) the arguments surrounding the intelligence testing of Canadian Native students, (d) the language barrier in standardized intelligence testing, (e) the role of academic self-concept in Native education, and (f) the role of parental attitudes toward education. The article concludes with suggestions for the future of Native education.

Current Debate on the Nature of Intelligence

What is intelligence? This question was debated by the Greek philosophers Plato and Aristotle in their "writings predating the birth of Christ" (Walsh & Betz, 1990, p. 147). One modern day theorist, Sternberg (1988), believes "A theory of intelligence should specify the nature of intelligence in terms of the external world [of the individual], the internal world [of the individual], and the interrelation between the two" (p. 69). Berry (1986) writes, "I conceive of *intelligence*, as presently used in psychology, to be a culture-bound, ethnocentric, and excessively narrow construct" (italics his, p. 35). And Anastasi (1988) simply states, "I regard intelligence essentially as a quality of behavior" (p. 208).

Society has tended to view intelligence in terms of one's performance in school (Sternberg, 1988). But as Sternberg would argue, "the intelligent person is not someone who merely does well on a test or in the classroom but one who can use his or her mind to fullest advantage in all the various transactions of everyday life.... Intelligence involves the ability to adapt to one's environment" (pp. xiii, 11).

If there is one point of agreement on the nature of intelligence, it would be the view "that not all cultures view intelligence in the same way or consider the same behaviors to be intelligent" (Sternberg, 1988, p. 48). Different cultures provide different environments that would demand different adaptations (Berry, 1986). Sternberg (1988) defines this adaptation in the following way: "intelligence ... is something that a culture creates to define what is good performance in that culture, and to account for why some people perform better than others on the tasks that culture happens to value" (p. 46). He adds, "Intelligence is essentially a cultural invention to account for the fact that some people are able to succeed in their environment better than others" (p. 71). And as McShane and Plas (1984) point out, "from culture to culture, difference does not need to imply deficit" (p. 87).

But what do we really know about the concept of intelligence and cross-cultural implications? Berry (1986) advises: "As psychologists, we should admit that

we do not know in any absolute or a priori sense what intelligence is in other cultures, and until we do, we should not use *our* construct to describe *their* cognitive competencies, nor *our* tests to measure *them*" (italics his, p. 36). But Sternberg (1984b) contends that "there are certain elements of human behavior that are so much a part of being human that they are extremely likely to be a part of intelligent functioning in virtually any human environment" (p. 319). He (1985) later hypothesized:

I believe that there are many aspects of intelligence that transcend cultural boundaries and that are, in fact, universal. Moreover, I am aware of no evidence to suggest that either the hardware (anatomy and physiology) of cognitive functioning or the potential software (cognitive processes, strategies, mental representations, and so on) of such functioning differs from one culture or society to the next. To the contrary, any evidence I have seen suggests that both the hardware and potential software of the cognitive system are the same across the known range of sociocultural milieus. What differ, however, are the weights, or importances, of various aspects of mental hardware and software as they apply to defining what constitutes intelligent behavior. (p. 52)

Vernon, Jackson, and Messick (1988) conclude that "It has long been recognized ... that cultural differences between groups may exert a profound influence on the differential development of distinct patterns of mental abilities" (p. 208).

Thus, although some believe that there are culture-bound aspects to intelligence (i.e., how certain mental abilities are developed according to cultural constraints), there is apparently inconclusive evidence to support universal facets of human intelligence. Evidence has been documented regarding the existence of different cultural groups living "competent lives in their own ecological contexts" even though these groups perform differently on perceptual and cognitive tasks (Berry, 1986, p. 36). Sternberg (1985) observes:

Some cultures are likely to put much more emphasis on developing certain kinds of skills than do other cultures, which will in turn place their emphasis on developing other kinds of skills. As a result, cultures may appear to show mean differences in levels of measured intelligence—but probably only when intelligence is measured in terms of the knowledge and skills required by one of the two (or more) cultures. This argument applies as well to multiple subcultures within a single culture. Even if one could find a set of test items that measured just those skills that are common to the adaptive requirements of members of the two cultures, the test would be incomplete because it failed to measure the aspects of adaption that are specific to but nevertheless relevant in each of the individual cultures; moreover, the test would most likely be incorrectly scored in a way that assumed that the weights of the common elements in adaptation were the same across the two cultures. (p. 53)

The differing views on the nature of intelligence and on the cross-cultural versus universals debate should not be seen as a discouragement but rather as avenues for further research.

Present Controversy on the Use of Standardized Intelligence Tests

In spite of the cited disputations, attempts have been made to measure this phenomenon we call intelligence. As is found in definitions of intelligence and its probable areas of universality, the debate is not silent on the measuring of this construct in and between different cultures. Here is a sampling of opinions.

McDiarmid (1971): "it is now general knowledge that no test is culture free" (p. 15); Zacharias (1975): "I [would propose] that we not retreat to catch phrases like,

'I know these tests are not very good, but they are all we have.' There are many other ways to assess a child's general competence" (p. 29); Osborne (1985): "[Some] problems (there are others) related to testing people from a different culture from the one in which the test was developed.... unfamiliarity with the demands of the test; antagonism toward testing; speed of response" (p. 10); Chrisjohn (1986): "When a psychologist applies a standard IQ test to Indian and non-Indian children, it is implicitly believed that the test measures 'the same thing, in the same units, with the same degree of precision' in the two groups.... [This is an example] of hundreds of instances where the question never arises as to whether such a procedure makes sense" (pp. 34-35); Borland (1986): "IQ tests, even with their history of abuse, have a place in our educational practice. One must be aware of their limitations, and one must be careful to augment their use with other instruments and methods" (p. 164); Sternberg (1988): "intelligence tests ... measure only a very limited set of abilities.... A task that measures intelligence should be novel, but not totally outside an individual's experience.... Even if a given task requires the same mental processes for members of various groups, it is unlikely to be equivalent for the groups either in its novelty or in the degree of automatization prior to the test" (pp. 19, 61, 63); McShane and Berry (1988): "Since the early 1960s, researchers have pointed out that the meaning of a test score depends on its susceptibility to a number of culture specifics" (p. 416); Worthen and Spandel (1991): "even well-intentioned uses of tests can disadvantage those unfamiliar with the concepts and language of the majority culture producing the tests. The predictable result is cultural and social bias—failure of the test to reflect or take into account the full range of the student's cultural and social background" (p. 67).

There has been some discussion on the construction of intelligence tests. In view of the many arguments against the use of such instruments (Perrone, 1991), the basic premise behind much of the discussion is presenting tasks to students that they should be able to solve based on past learning experience. However, because different people have different skills that can be identified as comprising what we refer to as intelligence, it is not possible to create one test that would be useful in all cultures (Sternberg, 1988). Common and Frost (1988), in reference to one commonly used IQ test, point out that:

The inclusion of certain ethnic groups in the standardization of the WISC-R does not assure that the norms can be fairly applied to the members of those ethnic groups or others. The unique patterns exhibited by a certain cultural group will be lost in the total variance of the norming groups.... Therefore, the minority groups' effects will simply be averaged out over all the test scores and lost. (p. 22)

The role of intelligence tests in deciding the educational future of students has been another source of discontent among educators. As Perrone (1991) stresses, "Reasons for caution ... include the possible loss of children's self-esteem" (p. 136).

Another overlapping consideration is the use of speed in standardized intelligence testing and the effect this has on the abilities of students from cultures that are different from the norming culture. We know that the "importance of speed to intelligence is largely a cultural notion ... In some cultures, speed plays essentially no role. Tests that place a premium on speed thus impose a gross inequity on members of such cultures" (Sternberg, 1984a, p. 696). Willie (1985) further advances this point: "Even if educational and other opportunities could be made absolutely equal, different subgroups would probably manifest different strengths

and weaknesses in mental abilities because of their differing cultural conditioning" (p. 626).

A further step in this discussion centres around the faith that people tend to put in IQ scores. As Sternberg (1988) found, "Few people are willing to admit that they are entranced by test scores" (p. 35). But the question must be raised regarding the validity of this score. Is an IQ score the only evidence we have for conceptualizing a person's intelligence? As a result of research in the area of child development, we are now much more aware that many processes are involved in mental functioning. Each intelligent action is made up of complex interactions between information processing components (Neill & Medina, 1989; Perrone, 1991). Once again, we find ourselves with unanswered questions for which only research will eventually be able to provide answers.

Arguments Surrounding the Intelligence Testing of Canadian Native Students

An effort to determine Indian intelligence was carried out in the 1800s by an individual named Samuel Morton. He believed that the volume of a skull was directly proportional to the intellectual capacity of the brain in it. In his estimation, Indians were close to the bottom of the human intelligence scale. However, there are questions about his attempts to use his data to prove his own prejudices (Common & Frost, 1988).

Nonetheless, interest in Native intellectual abilities predates Samuel Morton. Brooks (1978) reports that, "In 1784, Benjamin Franklin published a pamphlet in England that attempted to convince people that Indians were just as competent in intellectual functioning as they, but rather placed more emphasis on physical prowess and survival skills than on 'school learning'" (p. 58). It would be several more years before standardized intelligence tests became available. But nine years after the Binet-Simon tests were published, Indian children were used as subjects in a study (Brooks, 1978).

Research into the intellectual abilities of Canadian Native students, as previously pointed out, have raised questions as to the usefulness of administering intelligence tests to individuals who are not members of the culture or cohort on which the tests are normed. Questions have also been raised about the adequacy of the educational system in its attempts to instruct cross-cultural students (Lane, 1972; Common & Frost, 1988; Sternberg, 1988). As McDiarmid (1971) notes: [There is a] "complex of variables that underlie Indian behavior" [in the classroom] (p. 11).

One solution to the problem has been to renorm tests on the Native population for which they will be used. However, this approach has been criticized because of an underlying assumption that Native peoples and cultures are a homogeneous group (Common & Frost, 1988). In 1972, Lane made the following observations:

Prior to the arrival of Europeans on this continent, there were a number of peoples and cultures here. These may have had underlying relationships but ... Some of the peoples and some of the cultures were so different from one another that it is really only co-existence on this continent and our assumption of their Asian ancestry ... that justifies the single designation of 'Indian' ... apart from a few ... studies, we know little of the psychological characteristics of particular Indian populations.

We are still at the stage in which purportedly serious researchers can study Indian children in one school classroom on the West coast and then write about 'the characteristics of

Canadian Indian children' Cultural characteristics occur in contexts and they may vary radically from one context to another. (pp. 352-354)

This point of view is reechoed by Common and Frost (1988). They assert: "The renorming of tests.... Instead of taking into consideration the *uniqueness* of children from Native culture ... simply results in correcting superficially for the test bias, without making it congruent with the competencies of these children" (*italics mine*, pp. 27-28).

Another solution to the problems involved in standardized intelligence testing, has been the development of what is referred to as a "culture-fair" test or in some cases a "culture-free" test. But a number of researchers have concluded that this approach does not resolve the problem of cross-cultural testing. Sternberg (1985) writes:

No test of intelligence can be *culture-free*: All tests require some degree of acculturation for their successful completion. But there is some question as to whether a test can be *culture-fair*. Can a given task measure intelligence to the same degree across cultures or even subcultures?... Unfortunately, people's experiences with tasks and classes of tasks tend to differ widely across cultures (and even, to a fairly large extent, within cultures) [*italics his*]. (p. 77)

Neill and Medina (1989) conclude that "Since knowledge and language are culture-bound, there is *no reason to believe* that a 'culture-free' test can be constructed" (*italics mine*, p. 692).

The Language Barrier in Standardized Intelligence Testing

Cross-cultural researchers realize the role that language plays in intelligence testing (Jamieson & Sandiford, 1928; McDiarmid, 1971; Osborne, 1985; Tempest & Skipper, 1988; Brescia & Fortune, 1989; Neill & Medina, 1989). And as Sternberg (1988) points out, "psychologists have found vocabulary to be perhaps the best single indicator of a person's overall level of intelligence" (p. 199), a point previously noted by Butler (1975). Brandt (1984), in reference to studies using the WISC-R among American Natives, suggests that "If anything, the WISC-R may measure degree of English language proficiency" (p. 76). She also recognizes, "It is not that Indian children are nonverbal or unable to use the verbal channel, but, rather that the interaction systems in different cultures allocate use in the verbal versus the visual systems differently" (p. 79).

Thus, although there are probably several cultural factors affecting the testing of intelligence, the evidence suggests the language barrier as a major reason why we need to reevaluate the usefulness of standardized IQ testing among Canadian Native students. The next sections outline two other factors involved in the legitimacy of standardized testing.

The Role of Academic Self-Concept in Native Education

Some research has shown a positive correlation between a student's self-concept ("broadly defined ... [as] a person's perceptions of himself/herself") and academic achievement (Rampaul, Singh, & Didyk, 1984, p. 214). Our awareness through research of the age-grade displacement of Indian students suggests a decrease in the self-concept of these students as they progress through school.

One recent study on the relationship between the academic performance and the academic self-concept of Native students emphasizes the significance of this

research. "The importance of being provided with a strong support system was highlighted by one student's unsolicited comment written on the back of the test packet: 'Truly! If I had my deserved attention and the right encouragement, no one could stop me'" (Wall & Madak, 1991, p. 49).

The Role of Parental Attitude Toward Education

The importance of the family in a student's academic success is outlined in a recent study conducted among a sample of Asian students in the United States (Caplan, Choy, & Whitmore, 1992). This supports a previous study that found the influence of parental attitude to account for differences in school achievement, as compared with parental SES (Das, Manos, & Kanungo, 1975). More research of this nature is needed among Indian students.

Conclusions

The problems that, to this day, plague cross-cultural education [are]: the mismatch between the educational objectives of a school system based in one culture and the lifestyles, values, and goals of students attending it who come from a different cultural background.... When this student's intellectual potential is assessed with instruments developed for and normed on children from the majority population, then the student is faced with the prospect of being evaluated, not on the basis of his or her personal capabilities, but on the extent to which he or she has *acculturated* himself or herself [italics mine]. (Common & Frost, 1988, pp. 18-19)

Common and Frost (1988) conclude that "the review of the use of the WISC-R has shown that there is an obvious need to search for more appropriate and effective ways to assess the intelligence of Native students" (p. 25). Native educators should play the leading role in any such endeavor.

In view of (a) the complex nature of intelligence, (b) the complex nature of culture and its influences on human behavior, and (c) the uncertainties involved in testing intelligence among Canadian Native students, I would first strongly suggest a moratorium on all IQ testing among Native students. As Brooks (1978) found,

Comparisons of the performance of Native and non-Native children on standardized achievement tests usually show the Native children score below White norms. Although many standardized tests are "biased" against the Indian child, such findings have appeared so consistently that a former Commissioner of the Indian Bureau in the United States remarked that these studies "have yielded a familiar and by now dreary, statistic." (p. 57)

The use of standardized intelligence tests to place students could temporarily be replaced by the teacher who is in the best position to evaluate the student (Sexsmith, 1990; Perrone, 1991). This assumes that a teacher's evaluation is more appropriate than an IQ test.

My second suggestion concerns future research. We need to gain an understanding into the Native concept of intelligence (Berry, 1986), or as Common and Frost (1988) state, "into the components of Native intelligence" (p. 28). Chrisjohn and Lanigan (1986) elaborate:

Research on Indian intellect requires ... at least a working model of what it is.... In research on intelligence in Indians there are no Indian-specific or Indian-generated models. Rather, the theories and issues are adopted wholesale from non-Indian theorists, and are generally thought to be applicable.... Theory of Indian intelligence must eventually be constructed

from within Indian ranks, with Indian perspectives and concerns reflected in its development. (pp. 7, 9)

What would be the best way to accomplish this? One suggestion comes from Sternberg (1984b), who has used this technique in his own research. "One direct, and, I believe, effective way of finding out what constitutes intelligent behavior in a given culture or subculture is to ask [the] people" (p. 326).

A third suggestion in regard to the intellectual assessment of Native students is the concept of "Indian Control of Indian Education.... [Then] Indian education will begin to do what all education systems should do—promote the culture of the society it serves" (Green, 1990, p. 37). As Green points out in his article, "local (Indian) control of education is good for Native people and is the right direction to take" (p. 35).

Since the 1940s, Indian people have been demanding the right to be involved in the education of their children. The National Indian Brotherhood's (1972) policy paper *Indian Control of Indian Education* was instrumental in influencing the Department of Indian Affairs to begin the transfer "of education for Indian children to Indian parents" (Green, 1990, p. 37). But who determines if and when this solution can be viewed as "successful"? Paulet (1988) holds the following viewpoint:

Natives ... believe that education should enhance the presentation of culture and language, while many whites view education as preparation for employment or for life in general. In fact, many whites are convinced that education should promote the integration of all groups into the dominant culture and are content to impose their own structures and procedures on the traditional lifestyles and political systems of the Natives. (p. 208)

Notwithstanding the differences and difficulties, Indians must still be able to function successfully in the dominant White culture with their self-esteem intact. This success must be defined, in the present power structure, by the white culture. Green (1990) believes that "Native people do recognize the fact that societies adapt to and borrow from other cultures" (p. 38). In spite of Vernon's (1966) comments to the contrary, if this is truly the Native way of thinking, then the future education of Native children in Canada is in competent hands.

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