Who Are the Bright Children? The Cultural Context of Being and Acting Intelligent

by Robert J. Sternberg

In the United States as well as in much of the developed world, many of us tend to take for granted that children who do well on teacher-made and standardized tests are intelligent. But different cultures have different views of intelligence, so which children are considered intelligent may vary from one culture to another. Moreover, the acts that constitute intelligent behavior may vary from one culture to another. Whether teachers take into account the differences in conceptions of who is intelligent and who acts intelligently can also affect how well students learn. This article describes how culture influences what constitutes intelligence, intelligent acts, and intelligent teaching.

Keywords: context; culture; intelligence

How do you identify a schoolchild who is bright or who acts the way a bright child is expected to act? In North America, we might look at conventional ability or achievement test scores, or grades in school. When investigators study intelligence, they often assume that intelligence is perceived as, and is, exactly the same thing from one culture to another. For example, most of the empirical studies cited in contributions to the *International Handbook of Intelligence* (Sternberg, 2004b) use tests drawn from the same set of Western measures of intelligence, sometimes translated into other languages, other times not. Moreover, Herrnstein and Murray (1994), among others, have drawn rather sweeping cross-cultural conclusions on the basis of such tests.

The issue of the relationships among culture, intelligence, and education are by no means new. They have been dealt with by Heath (1983); Lave (1988); Luria (1976); Mayer, Tajika, and Stanley (1991); Saxe (1990); and many others who have taken a point of view related to that presented here. Yet recent work, some of it discussed here, has enriched our understanding of these relations and has the potential better to inform us of how we can improve our educational practices. Moreover, although many of us believe that culture and intelligence interact (see Sternberg, 2004a), many others do not (see essays in Sternberg & Grigorenko, 2002b). A substantial majority of intelligence theorists and researchers believe that intelligence is best defined in terms of a universal general ability (*g*) that is fixed across cultures. It is to be hoped that some of the more contemporary studies described here will change some minds. In education, such mind changing is important, because, as this article shows, the interaction of culture and intelligence has major implications for education. In particular, the acts that constitute intelligent behavior vary from one culture to another. Whether teachers take into account the differences in conceptions of who is intelligent and who acts intelligently can also affect how well students learn. When students are taught in ways that take into account their cultural contexts and that are culturally appropriate for them, they can achieve at higher levels.

We must begin with the obvious question: What is culture? The term is used here as it was by Berry, Poortinga, Segall, and Dasen (1992). They described six uses of the term: descriptively to characterize a culture, historically to describe the traditions of a group, normatively to express rules and norms of a group, psychologically to emphasize how a group learns and solves problems, structurally to emphasize the organizational elements of a culture, and genetically to describe cultural origins.

The theory motivating much of the work described here is the theory of successful intelligence (Sternberg, 1985, 1997, 1999), according to which "successful intelligence" is defined as what is needed for success in life, according to one's own definition of success, within one's sociocultural context. One acquires and uses these skills and this knowledge by capitalizing on strengths, correcting or compensating for weaknesses, and adapting to, shaping, or selecting environments, through a balance of analytical, creative, and practical abilities. It might seem strange at first to think of one's own definition of success as mattering for successful intelligence. But people develop their intellectual skills in line with where in life they wish to go: Professional tennis players, artists, violinists, and plumbers all need to develop somewhat different (although partially overlapping) sets of intellectual skills to succeed in their respective lines of work.

Of course, there are many alternative theories of intelligence as well (e.g., Carroll, 1993; Cattell, 1971; Cattell & Cattell, 1973; Ceci, 1996; Gardner, 1983, 1999; Guilford, 1967; Gustafsson, 1994; Horn & Cattell, 1966; Jensen, 1998; Spearman, 1927; Thurstone, 1938), many of which are reviewed in Sternberg (1990, 2000) and Cianciolo and Sternberg (2004).

What Does It Mean to Be Intelligent?

Intelligence may be conceived in different ways in different cultures (Berry, 1984; Serpell, 2000; Sternberg, 2004a; Sternberg & Kaufman, 1998). Such differences are important, because cultures evaluate their members, as well as members of others cultures, in terms of their own conceptions of intelligence. Almost all of the judgments of intelligence that are made in the world are made on

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the basis of people's implicit theories, not on the basis of tests, whether or not they are based on psychological (explicit) theories. When people listen to a job talk that is part of an employment interview, meet potential romantic partners, listen to politicians, and the like, it is implicit theories, not explicit ones, that lead them to make judgments about others' intelligence.

For example, Yang and Sternberg (1997a) reviewed Chinese philosophical conceptions of intelligence. The Confucian perspective emphasizes the characteristic of benevolence and of doing what is right. As in the Western notion, an intelligent person spends a great deal of effort in learning, enjoys learning, and persists in lifelong learning with a great deal of enthusiasm. The Taoist tradition, in contrast, emphasizes the importance of humility, freedom from conventional standards of judgment, and full knowledge of oneself as well as of external conditions. Although these virtues may sound like matters of character to us in the West, in traditional Taoist thinking, character and intelligence were closer in conception than they are for many of us today.

The difference between Eastern and Western conceptions of intelligence may persist even in the present day. Yang and Sternberg (1997b) studied contemporary Taiwanese Chinese conceptions of intelligence and found five factors underlying these conceptions: (a) a general cognitive factor, much like the *g* factor in conventional Western tests; (b) interpersonal intelligence (i.e., social competence); (c) intrapersonal intelligence; (d) intellectual self-assertion; and (e) intellectual self-effacement. The factors uncovered in Taiwan differ substantially from those identified by Sternberg, Conway, Ketron, and Bernstein (1981) in the United States, where intelligence is seen in terms of (a) practical problem solving, (b) verbal ability, and (c) social competence. In both countries, however, people's implicit theories of intelligence seemed to go quite far beyond what conventional psychometric intelligence tests measure.

Similarly, a study of Kenyan conceptions of intelligence (Grigorenko et al., 2001) found four distinct terms constituting conceptions of intelligence among rural Kenyans: *rieko* (knowledge and skills), *luoro* (respect), *winjo* (comprehension of how to handle real-life problems), and *paro* (initiative). Only the first directly referred to knowledge-based skills (including but not limited to the academic).

These Taiwanese and Kenyan conceptions of intelligence emphasize social skills much more than do conventional U.S. conceptions of intelligence. At the same time, they recognize the importance of cognitive aspects of intelligence.

It is important to realize, again, that there is no one overall U.S. conception of intelligence. Indeed, Okagaki and Sternberg (1993) found that different ethnic groups in San Jose, California, had rather different conceptions of what it means to be intelligent. For example, Latino parents of schoolchildren tended to emphasize the importance of social competence skills in their conceptions of intelligence, whereas Asian parents tended to emphasize rather heavily the importance of cognitive skills. Anglo parents also emphasized cognitive skills. Teachers, representing the dominant culture, emphasized cognitive more than social competence skills. The rank order of children of various groups' performance in school (including subgroups within the Latino and Asian groups), as evaluated by their teachers, could be perfectly predicted by the extent to which their parents shared the teachers' conception of intelligence. In other words, teachers tended to reward those children who were socialized into a view of intelligence that happened to correspond to the teachers' own.

In sum, people have different conceptions, or implicit theories, of intelligence across cultures. From a practical point of view, one may still try to draw restricted comparisons of scores on given tests across cultures. For example, Western tests may still be predictive in other cultures (Vernon, 1969), even if their appropriateness varies according to the culture and the use to which they are put. However, comparisons need to be conditional ones that take into account the context of the individuals' development (Laboratory of Comparative Human Cognition, 1982; Sternberg, 1990). The scores may not mean the same thing across the cultures.

What Does It Mean to Perform Intelligently?

Many times, investigations of intelligence conducted in settings outside the developed world can yield a picture of intelligence that is quite at variance with the picture one would obtain from studies conducted only in the developed world. Luria (1931, 1976) found that Russian farmers refused to accept mathematical problem-solving tasks of a kind that typically are used in North America and Europe to measure intelligence. Cole, Gay, Glick, and Sharp (1971) found that members of the Kpelle tribe in Liberia thought that functional sorting was more sensible than taxonomic sorting, the latter of which, on Western tests, tends to be viewed as cognitively more mature. Gladwin (1970) found that South Pacific Islanders could solve navigational problems in sailing that would stump all of us in North America. Carraher, Carraher, and Schliemann (1985) found that Brazilian street children who could not perform school math could satisfactorily do the same math in the context of selling on the street (see also Ceci & Roazzi, 1994; Nuñes, 1994).

In a study in Usenge, Kenya, near the town of Kisumu, researchers were interested in school-age children's ability to adapt to their indigenous environment. They devised a test of practical intelligence for adaptation to the environment (see Sternberg & Grigorenko, 1997; Sternberg et al., 2001). The test of practical intelligence measured children's informal tacit knowledge of natural herbal medicines that the villagers believe can be used to fight various types of infections. Tacit knowledge is, roughly speaking, what one needs to know to succeed in an environment and is usually not explicitly taught nor often even verbalized (Sternberg et al., 2000). Children in the villages used their tacit knowledge of these medicines an average of once a week in medicating themselves and others. More than 95% of the children suffered from parasitic illnesses. Thus, tests of how to use these medicines constitute effective measures of one aspect of practical intelligence as defined by the villagers as well as their life circumstances in their environmental contexts. Note that the processes of intelligence are not different in Kenya. Children must still recognize the existence of an illness, define what it is, devise a strategy to combat it, and so forth. But the content to which the processes are applied, and hence appropriate ways of testing these processes, may be quite different.

Middle-class Westerners might find it quite a challenge to thrive or even survive in these contexts or, for that matter, in the contexts of urban ghettos often not distant from their comfortable homes. For example, they would not know how to use any of the natural herbal medicines to combat the diverse and abundant parasitic illnesses they might acquire in rural Kenya.

The researchers measured the Kenyan children's ability to identify the medicines, where they come from, what they are used for, and how they are dosed. To their surprise, all correlations between the test of indigenous tacit knowledge and scores on fluid-ability tests (i.e., tests of flexibility in thinking) and crystallized ability tests (i.e., tests of accumulated knowledge of words and related concepts) were negative. The correlations with the tests of crystallized abilities were significantly so. For example, the correlation of tacit knowledge with vocabulary (English and Dholuo combined) was –.31 ($p < .01$). In other words, the higher the children scored on the test of tacit knowledge, the lower they scored, on average, on the tests of crystallized abilities (vocabulary). These results suggest that those who tended to learn practical knowledge learned less academic knowledge, and vice versa.

The Kenya study suggests that the identification of a general factor of human intelligence may tell us more about how abilities interact with cultural patterns of schooling and society, especially Western patterns of schooling and society, than it does about the structure of human abilities. In Western schooling, children typically study a variety of subject matters from an early age and thus develop skills in a variety of skill areas. This kind of schooling prepares the children to take tests of intelligence, which typically measure skills in a variety of areas. Often, intelligence tests measure skills that children were expected to acquire a few years before taking the intelligence tests. But as Rogoff (1990, 2003) and others have noted, this pattern of schooling is not universal and has not even been common for much of the history of humankind. Throughout history and in many places still, schooling, especially for boys, takes the form of apprenticeships in which children learn crafts from early ages. They learn what they will need to know to succeed in trades, but not a lot more. They are not simultaneously engaged in tasks that require the development of the particular blend of skills measured by conventional intelligence tests. Hence, it is less likely that one would observe a general factor in their scores, much as we discovered in Kenya.

From the standpoint of an academic test, the rural Kenyan children would not look very bright. But in fact, they had learned knowledge that was important in their own cultural context. For many of the children who grow up in the United States, there is no need to choose between the intelligence needed for success in school and that needed for success in life outside of the school. To these children in rural Kenya, however, the intelligence needed for survival and success in life, in general, may not be the same as the intelligence needed for success in school, and the former may be more important to them than the latter. A teacher might be inclined to "write off" such children because of their underdeveloped academic skills, without appreciating that the children had developed other skills that were, arguably, more important for adaptation in their own cultural milieus. Ideally, a teacher should attempt capitalize on what the children do know, using it as a starting point or scaffolding on which other knowledge can be built. But certainly, the children could not be faulted for lacking learning skills. They merely had applied those skills to content other than that sanctioned by the schools.

These results suggest that tests of abilities need to take into account how children are schooled. One might argue that the tests used in Kenya measure knowledge specific to the particular population in question. But many of the questions on conventional intelligence tests also measure knowledge that is quite specific—to our own culture. We need to apply to our own tests, constructed for children in mainstream U.S. culture, the same arguments we might apply to tests constructed to be appropriate for children elsewhere.

Related work has been done by Shirley Brice Heath (1983) in the United States. Heath studied language development in three communities in the Piedmont Carolinas: Trackton (lower-class Black), Roadville (lower-class White), and Gateway (middle-class White). Trackton children were at a disadvantage when they started school from the standpoint of understanding similarities and differences between objects and skills that are important in school and critical on typical intelligence tests. Furthermore, Trackton children never spontaneously volunteered to list the attributes of two objects that were similar to or different from each other. Instead, they seemed to view objects holistically, comparing the objects as wholes rather than attribute by attribute (Heath, 1983). Although they may have been sensitive to shape, color, size, and so on, they did not use those attributes to make judgments as to how the two objects were similar or different. This unfamiliarity with abstraction, and their viewing of things in holistic contexts, impedes progress in reading as well as in reasoning.

Researchers have found related, although certainly not identical, results in a study done among Yup'ik Eskimo children in southwestern Alaska (Grigorenko et al., 2004; see also Lipka, 2000). They assessed the importance of academic and practical intelligence in rural and semiurban Alaskan communities.

This research was motivated by an observation made while our team was working both with the Eskimo children and with their teachers. The teachers made it clear that they considered the children to be not particularly bright. And indeed, in terms of the knowledge and skills emphasized in traditional schooling, the children did not fare well. But at the same time, the children had developed superior skills of other kinds. They possessed knowledge about hunting, fishing, gathering, herbal treatments of illnesses, and other topics that their teachers did not possess. For example, they could take a dogsled from their village to another village in the dead of winter and find their way. Their teachers, in contrast, would die if they attempted to do the same; they would fail to discern the landmarks and quickly would get lost. So the children had adaptive skills relevant to their own environments that the teachers lacked. But of course, it is the teachers whom society sanctions to do the evaluations, not the students.

Semiurban children outperformed rural children on a measure of crystallized intelligence, but the rural children statistically significantly outperformed the semiurban children on the measure of practical intelligence for the Yup'ik environment. The test of tacit knowledge skills was superior to the tests of academic intelligence in predicting practical skills as evaluated by adults and peers of the rural children (for whom the test was created), but not of the semiurban ones.

This study, like the Kenya study, suggests the importance of practical intellectual skills for predicting adaptation to everyday environments. Here, as in Kenya, the processes of intelligence do not differ from those in the environments in which most readers of this article live. The Eskimo children need, for example, to plan trips, just as we all do. But the constraints of planning these trips, often by dogsled in environments with no landmarks that

we would recognize, are very different, and hence different tests are needed.

Testing Intelligent Performance as a Cultural Act

The cultural meaning of an act of assessment can vary from one place to another. For example, Greenfield (1997) found that it means a different thing to take a test among Mayan children than it does among most children in the United States. The Mayan expectation is that collaboration is permissible and that it is rather unnatural not to collaborate. Such a finding is consistent with the work of Markus and Kitayama (1991), suggesting different cultural constructions of the self in individualistic versus collectivistic cultures.

A study done in Tanzania (see Sternberg & Grigorenko, 1997, 2002c; Sternberg et al., 2002) points out the risks of giving tests, scoring them, and interpreting the results as measures of some latent intellectual ability or abilities. The researchers administered tests to schoolchildren between the ages of 11 and 13 years living near Bagamoyo, Tanzania. Tests included a form-board classification test (a sorting task), a linear syllogisms test, and a 20-questions test ("Find a Figure"), all of which measure the kinds of skills required on conventional tests of intelligence. Of course, the researchers obtained scores that they could analyze and evaluate, ranking the children in terms of their supposed general or other abilities. However, they administered the tests dynamically rather than statically (Brown & Ferrara, 1985; Feuerstein, 1979; Grigorenko & Sternberg, 1998; Guthke, 1993; Lidz & Elliott, 2000; Sternberg & Grigorenko, 2002c; Tzuriel, 1995; Vygotsky, 1978).

Dynamic testing is like conventional static testing in that individuals are tested and inferences about their abilities made. But dynamic tests differ in that children are given some kind of feedback to help them improve their performance. Vygotsky (1978) suggested that the children's ability to profit from the guided instruction they received during the testing session could serve as a measure of their zone of proximal development, or the difference between their developed abilities and their latent capacities. In other words, testing and instruction are treated as being of one piece rather than as being distinct processes. Such measurement is especially important when not all children have had equal opportunities to learn in the past.

In a control group given merely a pretest and a posttest, the correlations between pretest and posttest scores were generally at the .8 level. One would expect a high correlation because there was no intervention, and hence the retesting was largely a measure of alternate-forms reliability. More important, scores on the pretest in the experimental group, which received a cognitive-training intervention between pretest and posttest, showed only weak, although significant, correlations with scores on the posttest. These correlations, at about the .3 level (which were significantly lower than those in the control group), suggested that tests administered statically to children in developing countries may be rather unstable and easily subject to influences of training. The reason could be that the children are not accustomed to taking Western-style tests and so profit quickly even from small amounts of instruction as to what is expected from them.

The investigators also found the posttest score to be the better predictor of working memory in the experimental group. Children in the dynamic-testing group improved significantly more than those in the control group (who did not receive intervening dynamic instruction between pretests and posttests).

Teaching as a Cultural Act

Nisbett (2003) found that some cultures, especially Asian ones, tend to be more dialectical in their thinking, whereas other cultures, such as European and North American ones, tend to be more linear. And individuals in different cultures may construct concepts in quite different ways, rendering the results of concept formation or identification studies in a single culture suspect (Atran, 1999; Coley, Medin, Proffitt, Lynch, & Atran, 1999; Medin & Atran, 1999). Thus, groups may think differently about what appears superficially to be the same phenomenon, whether a concept or the taking of a test. What appear to be differences in general intelligence may in fact be differences in cultural properties (Helms-Lorenz, Van de Vijver, & Poortinga, 2003).

When children are taught in a way that better matches their culturally acquired knowledge, their school performance improves (Sternberg, Lipka, Newman, Wildfeuer, & Grigorenko, in press; see also Ladson-Billings, 1995). Grade 6 students from seven communities in three school districts in Alaska participated in a mathematics curriculum project. Children learned geometric concepts better when they were taught in terms of concepts relevant to their daily lives—in this case, fish racks used to dry fish—than when they were taught in conventional ways through typical textbooks.

Culture, Intelligence, and Schooling

The studies described above have several implications for understanding how culture, intelligence, and schooling interact.

First, we have seen that contrary to traditional views, culture interacts with the nature of intelligence as well as with implicit theories of it. Yet a substantial majority of experts on intelligence believe that there is a general factor of intelligence that is the same everywhere and that can be measured in more or less the same way everywhere (see Demetriou, 2002; Detterman, 2002; Gottfredson, 2002; Humphreys & Stark, 2002; Jensen, 2002; Petrill, 2002; see also Carroll, 1993; Cattell, 1971; Cattell & Cattell, 1973; Herrnstein & Murray, 1994; Jensen, 1998).

What people believe about culture and intelligence matters because teachers who believe that culture and intelligence are independent are likely to view children of all cultures in much the same way, at least with respect to cognitive abilities. Teachers need to understand both that children's intelligence is socialized differently as a function of culture (Sternberg & Suben, 1986) and that children's and parents' conceptions of intelligence differ as a function of culture (Sternberg & Kaufman, 1998). In particular, differences that in the past have been viewed as genetic may actually be socialized (cf. Rowe, 2005; Rushton & Jensen, 2005). Indeed, the racial categories we use reflect social rather than genetic groupings and differ substantially from one culture to another (Sternberg, Grigorenko, & Kidd, 2005).

Second, contrary to *g* theory, not all cognitive ability tests have a positive manifold; that is, they do not all correlate positively. Indeed, they may not correlate at all, or may even correlate negatively, as a function of the socialization and enculturation of intelligence and the kinds of tasks used to measure intelligence. This view is in direct contrast to that of *g* theorists, such as those mentioned above, and many other intelligence theorists dating

back to Spearman (1904). The view that all tests show a positive manifold is so widely accepted that it has become almost a mantra in the field of intelligence (Mackintosh, 1998). Why do so many investigators find this to be true? According to the data presented here, it is at least in part because they limit the content of their tests to materials that do in fact fall within the purview of standard hierarchical views of intelligence such as that expounded in detail by Carroll (1993).

The view of a positive manifold is part of our implicit theories of intelligence, as shown by the existence of halo effects, whereby people believe that those who are adept in one kind of ability are likely to be adept in others. Teachers may assume that if students do well in one thing, they will do well in others and that if they do poorly in one thing, they are likely to do poorly in others. Teachers in Alaska, for example, may believe that Yup'ik children's lower performance in academic subjects means that they are less bright, when in fact these children have many adaptive skills the teachers lack. Similarly, children in our inner cities who do poorly in school may possess many survival skills that their teachers lack. Children who survive day after day the rigors of inner-city life might far surpass their teachers' abilities to survive in a world with which the teachers are unfamiliar and that they do not understand. The children have the abilities, but they are not brought out by the ways in which they are taught, which divorce academic content from the children's realities.

Third, the results presented here point out that the very act of taking a static test may disadvantage children from certain challenging backgrounds (Sternberg & Grigorenko, 2002a). On the view presented here, the same test items may measure different skills for different students as a function of the socialization they bring to the test-taking situation. If a given test item is more novel for one student than another, it is measuring a different set of skills for the two children. Dynamic testing helps reduce these differences by having children learn things at the time they are tested, rather than relying merely on prior and often inert knowledge.

Fourth, our explicit theories of intelligence, which serve as the basis for almost all our measurements of abilities and achievement, fail to do justice to people's implicit theories of intelligence, not only in the East but even in the West. The practical problem-solving and social competence skills that people believe to be important to adaptation are largely ignored under our present regime of assessment. In other words, we are creating tests that simply are too narrow. They do not even correspond well to the rather broad definitions of intelligence proposed by the earliest theorists, such as Binet and Simon (1905/1916) and Wechsler (1939).

Fifth, teachers judge children's abilities and achievements on the basis of implicit theories of intelligence that often are excessively narrow (see Ladson-Billings, 1997). This narrowness is in part a function of their own socialization as teachers, in education schools and afterward, and in part a function of the tests they are being asked to give, which are based on narrow conceptions of abilities and achievements. But the result is a socioeducational system that is self-perpetuating and that wastes talent because it fails to recognize strengths outside the range of traditional measurements. Children may be viewed as incapable of success despite having the capabilities to succeed.

In sum, teachers ignore the interactions among intelligence, culture, and education at their own risk and also at the risk of the children with whose education and well-being they are entrusted. If we think about these results in terms of current education, we realize what a gap there is between what we as educators do and what we should know. When we think of the No Child Left Behind Act, however, its whole premise is different from that offered here. The act assumes that a given test measures the same thing for every student, that each student has an equal opportunity to score well on a given test, and that the tests are relatively fair, unbiased, and valid measures of achievement for all students. This article questions all of those assumptions.

Conclusion

In considering the results of the studies described in this article, it is important to keep in mind their limitations. Most have been conducted on relatively small samples, and the samples are not necessarily representative of the bulk of schoolchildren, either within the cultures in which the studies were conducted or outside. Moreover, even the broader range of skills sampled in the studies by no means fully captures the range of skills needed for successful adaptation to the environment.

The fact that one must be careful in drawing inferences across groups also does not necessarily generalize within groups. That is, conventional tests might accurately predict academic and other forms of success for many individuals in mainstream culture and even in other groups, but not when the various groups are combined because of differences in the kinds and amounts of learning opportunities afforded the various groups. However, even within groups, there are data to suggest that broader conceptions of what should be measured may enhance prediction. In one study in a variety of high schools and colleges in the United States, augmenting traditional analytical measures (the SAT) with creative and practical ones both substantially increased prediction of academic success and decreased ethnic group differences (Sternberg & The Rainbow Project Collaborators, 2005, 2006). Achievement (advanced placement) tests enhanced with creative and practical assessments decreased ethnic group differences as well (Stemler, Grigorenko, Jarvin, & Sternberg, 2006), and reductions in ethnic group differences in a business school admissions test (the Graduate Management Admission Test) could also be achieved by broadening the skills measured by the tests (Hedlund, Wilt, Nebel, Ashford, & Sternberg, 2006). A broader conception of abilities and achievement thus makes sense not only from the standpoint of improving construct validity but also from the standpoint of recognizing how socialized patterns of abilities and achievement may vary, on average, from one group to another.

When culture is taken into account, we recognize that what it means for students to be intelligent or to act intelligently, or even for us to teach intelligently, can vary from one cultural context to another. The studies described in this article have shown that conceptions of intelligence and of intelligent acts differ from one culture to another. We therefore need to be hesitant in imposing one culture's view of intelligence across the board. The mental hardware may be the same across cultures. After all, in every culture, people have to recognize when they have problems, define what the problems are, solve the problems, and then evaluate how well they have solved them. But the content of the problems to be solved is different, and what is considered a good solution

differs as well. If we recognize these facts, we may be more circumspect in passing judgments on people from the diversity of cultures in the United States and around the world.

One might ask how relevant the studies cited here are to understanding the abilities of U.S. schoolchildren, in contrast to those far away from U.S. shores. Consider three points.

First, some of these studies were conducted with U.S. schoolchildren. In reading an essay such as this, one may forget for a moment that ethnically and culturally diverse children in San Jose (Okagaki & Sternberg, 1993) or Togiak, Alaska (Grigorenko et al., 2004), are every bit as much "U.S. schoolchildren" as are culturally mainstream children in Minneapolis or Dallas.

Second, the principles described here apply not only to ethnically and culturally diverse children but also to children from the mainstream culture and the middle and upper middle classes. For one thing, many students have goals for which getting high grades in secondary school or even college is not a priority. They may wish to become professional athletes, dancers, musicians, carpenters, plumbers, entrepreneurs, actors, or whatever. Investing their time in developing expert levels of academic knowledge and skills may actually not be the best investment of their time. And even for students who place importance on them, such skills are not all that matter. Other, nonacademic skills, such as social, practical, and emotional skills, are important as well.

Third, all of this said, it is important to remember that academic knowledge and skills are a foundation for the development of life skills and are of at least some importance in a wide variety of life settings. Schooling of the type found in secular Western education develops critical thinking skills and as a result raises performance on conventional assessments of intelligence (Ceci, 1996). But adaptive success in life depends on much more than the conventional academic knowledge and skills taught in school.

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