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On Making Children Smarter: An Essay Review

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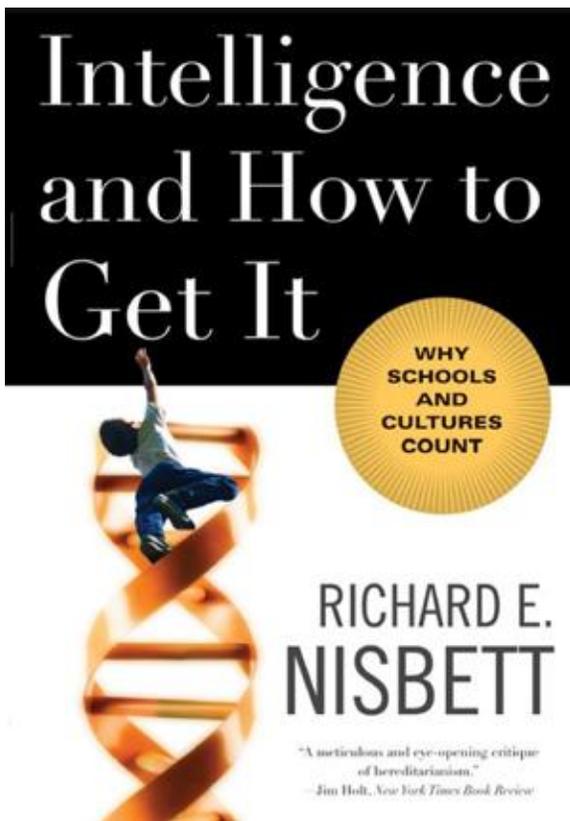
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On the face of it, Richard Nisbett's latest book, *Intelligence and How to Get It: Why Schools and Culture Count*, would seem to be a "must read" in that it purports to deal with a universally held goal—how to make children smarter. Written with great clarity and a strong sense of purpose, it is an occasion on which he brings to bear the scientific muscle of his discipline as research psychologist to the study of what is a new field for him—education. Nisbett is

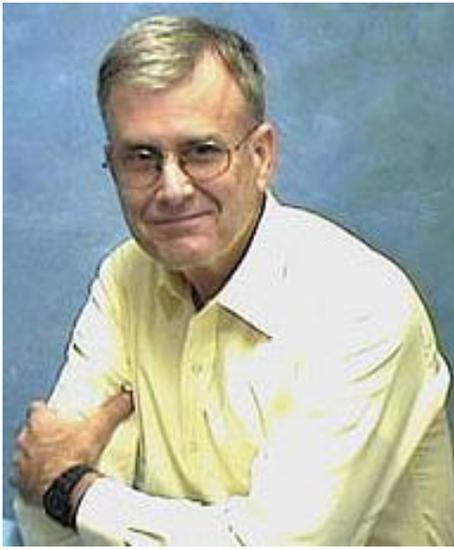
especially attentive to the challenge of overcoming the trailing position in intellectual resources and competence of children from disadvantaged backgrounds, in particular those from deprived African American families victimized by poverty and inferior education. His hook for attracting an audience is perhaps best described as an empirically-based troubleshooting exploration of how to make disadvantaged children smarter. At the

outset, Nisbett expresses sentiments that are by now familiar, almost commonplace: he is dissatisfied with American education, refers to evidence that its quality has fallen behind that of other nations, is convinced that it can and should be made better. Wide-ranging in its scope, the book offers a provocative exploration of issues that affect the intellectual development of children, but the vehicles he proposes for bringing about changes in intelligence are neither novel nor do they inspire confidence that they will be effective.



When Nisbett refers to intellectual ability, he deliberately alternates between using the terms “intelligence” and the colloquialism “smartness” as a means of conveying that intelligent behavior extends beyond that which IQ tests measure. It also allows him

to acknowledge tacitly the broad range of diversity of intellectual skills that psychologists have long sought to mine and sort out. Indeed, it could be said that the prevailing mode of studying intellectual functioning is aimed at identifying and ordering its complex structure. But because Nisbett’s interest is in raising the level of intellectual functioning, his discussion is largely confined to its measurable aspects, i.e., test scores, which impart an incomplete, misleadingly unitary, image of “smartness.” In keeping with his cautiously scientific posture, Nisbett resorts to the operational definition of intelligence: the way in which intelligence is measured to yield an IQ score is the basic conception of what intelligence is about. Over the years psychologists have waggishly dodged the issue of defining intelligence by stating that it is what an intelligence test measures. Nisbett does not explicitly adopt this ploy, but in effect uses it. Indeed, despite his claims to the contrary, for many phases of his discussion intelligence implicitly becomes the IQ score and the IQ test comes close to being reified in his discussion—as if it were the end rather than merely an awkwardly assembled means to approximating an end. That he is not entirely satisfied with such a stance is revealed by the fact that he conducts analyses which disassemble an IQ test score into its diverse component parts in a way that point to their greater or lesser relevance or importance. It leaves the reader to wonder to which concept of “intelligence” and “smartness” he owes his allegiance—to the univocal psychometrically credentialed index to which he devotes so much analysis or to the multidimensional construct which



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awaits precise definition. The degree to which Nisbett embraces measurement and measurability will be admired by some readers and arouse disappointment in others.

Nisbett aptly describes his mission as the demonstration of the malleability of intellectual competence. He begins by marshalling evidence culled from diverse sources that intelligence is changeable and then proceeds to explore how interventions, with special reference to schools and educational practice, can be designed to

make children smarter. He revisits analyses of the heredity/environment issue as it pertains to the origin of intelligence and describes how IQ measures are used to demonstrate that intelligence is changing over time. To combat the notion that the lower social status experienced by African Americans is inevitable, he notes that social historians have recorded a past era of accomplishment and greater social acceptance once enjoyed by African American people. He presents summaries of what psychologists and sociologists have observed about how poverty and alienation—non-intrinsic and therefore changeable forces—alter and complicate pathways of psychological development which interfere with the educational progress. He turns to his own cross-cultural studies of East Asian and Western societies which contrast what is salient and distinctive about their psychological propensities, pointing especially to the strong conviction held by East Asians that intellectual ability and performance are changeable and that they come about mainly from the investment of effort, a view which dovetails with his outlook on this issue.

The first hurdle for Nisbett to overcome is the mounting belief suggested by recent research that intelligence is for the most part inherited and therefore not modifiable. Without rejecting outright such research findings—results based on the degree of similarity found between the intelligence of identical twins reared apart and those reared together and others which compare the degree of resemblance between the intelligence of adopted children and that of

both their adopted and biological parents—Nisbett maintains that such investigations tend to overestimate the role of heredity. They are, he observes, based on samples of children who do not typically experience circumstantial forces that deviate so widely from the norm as to manifest the role of environmental influence. He thus concludes that the findings implicating the contribution of genetics to variation in intelligence do not apply equally to children from deprived backgrounds.

To buttress the view that intelligence is modifiable, Nesbitt calls attention to the work of John Flynn who has shown that the modal level of intelligence has risen consistently since intelligence tests were devised and administered during the past century. He uncovered this pattern of steady increase by comparing performance from one generation to the next on test items that were retained from one standardization of the test to its successor. Although these findings run counter to the prevailing image of the constancy of the IQ measure, if we take into account the skills called for by many facets of intelligence testing, they are not surprising. Growing patterns of urbanization, the degree to which educational opportunity has increased, and the expanded challenges and intensive practice demanded by technology—the more elaborate gadgetry we have learned to master, the heightened and more complex forms of stimulation that successive generations of media present along with the levels of multi-tasking they call forth, and the greater perceptual alertness and psychomotor agility with which virtually all

vehicle drivers have learned to cope—have all served to sharpen skills which may be expected to enhance IQ test performance. Flynn's analyses remind us that one reason for adhering to similar formats and content of intelligence tests despite growing awareness of their inadequacy is the degree to which they become a basis, a standard for looking at continuity and change in intellectual functioning over time. Their use in this fashion by Nisbett as well as in a multitude of other contexts, however, tends to endow them with an aura of authenticity, of intrinsic validity, that they do not deserve. Although Flynn's findings corroborate Nisbett's claim of the malleability of intelligence, they do not in fact support the image of ongoing intellectual decline which contributes to the premise of Nisbett's book.

To aid the reader in following his analysis of the IQ research data, Nisbett offers a remarkably lucid presentation of the statistical lines of reasoning that underlie the data analysis and measurement procedures central to examining the research studies to which he refers. His review and reassessment of these findings lead him to attribute less influence to the role of heredity, but his readiness to offer new quantitative estimations of the influence of heredity are based on an exaggerated notion of the precision with which such estimates can be made. A confusing aspect of his presentation is that Nisbett appears to have an inordinate faith in the validity, indeed, even in the feasibility, of the process of psychological measurement at the same time that he points to its deficiencies.

In a chapter that shows Nisbett at his best, at what he seems most comfortable and expert at doing, he sifts through systematically gathered quantitative data to determine what new can be learned from them. He provides a more fine-grained description based on the analysis of IQ subtest data of the pattern of improvement in IQ test performance first reported by Flynn, and then proceeds to show how performance on IQ tests is enhanced by school attendance. These analyses are viewed by him as solidifying his contention that it is possible to improve intelligence. But oddly, in so doing, he makes passing reference to many of the deficiencies of the tests on which the data are based, leaving the reader to question what is meant by intelligence and how it can be measured, to wonder what changes in the ability to perform on an intelligence test really mean.

In light of their centrality to Nisbett's work, it may be useful to take a moment to review and reconstruct the constraints that influenced the formation of intelligence tests a hundred years ago—and also the reasoning, some of it legitimate, that has led to a perpetuation of modes of measurement developed so long ago. Obviously, the original efforts to construct an intelligence test called on them to be made up of a multiplicity of items so that their outcomes would not depend on the response to but a handful of questions, and yet the fundamental need to include large numbers of questions in a practical time period—before fatigue and restlessness might set in—required the questioning process (and the time allocated for responses) to be brief,

almost staccato-like. Further, the test had to be made up of item sets, i.e., items of the same form and structure but of different difficulty. At the same time, their content was expected—but never actually demonstrated—to be relatively free of bias, that is, approximately equally fair for use with males and females, persons with urban and rural backgrounds, rich and poor, educated and uneducated. Further, they had to be made up of diverse streams of inquiry, i.e., they had to include items presented in a different format and content to avoid criticism that they were overly and unfairly narrow and meaninglessly repetitive. Thus, it seems safe to conclude that these *desiderata* were so restricting, probably overwhelming, that oddly, the question of what constitutes intelligence (still unresolved) was left in abeyance. If these measures stood up, i.e., were found to be correlated with other markers of intelligence, then so be it, and so it has become and largely remained.

Moreover, the mode of administration of the test introduces further challenges that complicate and undermine the measurement process. When an IQ test is presented on a printed page to render it capable of being group administered, its scope and content are further limited and the measurement has been seriously rendered vulnerable to biases associated with reading speed and accuracy, not to mention language familiarity. When designed for one-on-one individual administration, differences in administration, mode of presentation and the degree of disruptive anxiety aroused by the examiner may becloud and distort the

outcome. Especially when such tests are administered to young children, differences in their ability to understand a strange examiner's pronunciation and speech patterns, differences in the friendliness of their demeanor and the degree of anxiety aroused by being questioned in isolation by a strange adult, become additional sources of error. These problematic features are well known but tend to be brushed aside. It is not inappropriate to conclude that the content of intelligent tests is based less on psychologists' conception of which cognitive domains need to be assessed in order to measure intelligence than it is a reflection of issues of expedience, i.e., the availability of particular item formats and content that fit the specifications and requirements of measurement. Further, the image of a smooth, bell-shaped curve that implies a bilaterally symmetrical distribution of a homogenous ability has been constructed for statistical convenience. It obscures the fact that the actual range of variation in the magnitude of people's ability and knowledge is much greater (or smaller) depending on the domain being assessed and the skills and abilities of individuals who make up the distribution. When one thinks about it, the tolerance psychologists have shown for these well-known deficiencies is remarkable.

Furthermore, the constraints governing the creation of intelligence tests lead to a comedy of error avoidance that becomes even more absurd when psychologists seek to construct "culture-free" tests, i.e., when they are commissioned to find task formats and questions that are so foreign and

unrelated to the previous life experience of all potential examinees that they will be considered to be equally irrelevant to all examinees. It is as if when faced with the task of devising a test of musical ability, to avoid bias in content that would give unfair advantage to examinees who have had years of piano or violin lessons, we bypass the influence of differences in such (relevant) skills and experiences by designing a test wherein each examinee is given ten minutes to make a musical sound with a comb and wax paper. We are left to face the inescapable conclusion that the architects of culture-free intelligence tests are faced with the intrinsically contradictory charge of measuring an ability in ways that rule out what is most relevant and revealing of that ability

A sophisticated and accomplished researcher, Nisbett is well aware of the flaws embedded in an IQ score. However, he falls prey to their use because the metric devised to assess intelligence test performance is so widely studied and used. In effect that metric has become a standard data base, because some of the findings he is subjecting to reevaluation are based on this metric, and also, because he so values measurement that he seems to have become habituated to the deficiencies and distortions it so often introduces to psychological research..

The complexity of assessing intellectual functioning is highlighted by Nisbett's reference to his own cross-cultural studies. He points to dissimilarities in style between Western and East Asian modes of thought

which suggest that there are important differences between them in how effectively they respond to various kinds of intellectual challenges. In citing these findings, Nisbett reminds the reader, perhaps without intending to do so, that “smartness” takes many forms and that the process of intellectual development needs to be understood in terms of the multi-dimensionality of its components. Along with the diverse innate sensitivities and abilities that contribute to its complexity, intellectual development must be conceived as entailing multiple interacting pathways and outcomes that also reflect stylistic preferences and predilections that are culturally shaped. When Nisbett describes how the vigor and also the unique direction of intellectual development of East Asians is shaped by the potent influence of family ties and commitments, the reader is given a glimpse of the mass of antecedents that are capable of influencing such outcomes.

When Nisbett turns to his main objective, that of applying the unique knowledge and analytic skills of psychology to the task of improving education, there is a tendency for him to regard the formidable task of upgrading the education of disadvantaged children as continuous with the broader objective of improving the education of all children. Although these seemingly parallel aims have many elements in common, the goal of educating deprived children is more daunting, a fact that tends to be underplayed partly to avoid singling out already burdened children as having special needs, and also to obscure the fact that such schooling, grossly neglected until the recent past, is more

costly. From Nisbett’s perspective, the educational enterprise mainly suffers from being insufficiently goal-directed, and it is too untidy and disorganized to allow its effectiveness to be properly evaluated. The path to its improvement lies in its being redesigned so that it more closely fits the structure of a psychological experiment in which the classroom serves the role of a laboratory wherein the instructional process constitutes the input to be systematically controlled and the output is subject to measurement. Seemingly intent on parodying his stance, he goes so far as to suggest that educational research should be capable of being conducted with the same precision of methodology and scientific outcome as pharmaceutical research—as if the dosage and content of educational input can be as precisely defined and controlled and has an effect equal in specificity and measurability to that of pharmaceutical interventions.

In addressing his concern with advancing the educational accomplishment of African American children, Nisbett begins by examining the antecedents to their school careers. He summarizes findings that describe how child-rearing experiences and other facets of their early environments have been racked by poverty and social exclusion that have given rise to the deficits he is seeking to eradicate. They are presented as inevitable outcomes of a victimized state, as adverse conditions that do not so much need to be understood in terms of the full scope of their psychological ramifications, or as factors that may even contribute to a distinctive cultural pattern that gives rise to

its own cognitive signature. The depth and complexity of the early deprivation experienced by African American children tends to be played down by the matter-of-fact manner in which it is described and by the intimation that its most serious consequence is substandard achievement test performance that can be remedied by improved education. For example, in a single paragraph given over to this profoundly significant fact, Nisbett mentions almost in passing that the unwed maternity rate is 72% among African Americans as compared to 24% among Whites. His comment regarding this state of affairs is to acknowledge that it leads to a “host of problems” singling out the economic disadvantages associated with unwed parenting and the fact that single parent homes are likely to provide less stimulating environments for the child. Nisbett disappoints in his failure to look at both the antecedents and their educational implications more penetratingly. His attention is focused on that which is measurable, on achievement test score deficits and how to eliminate them.

A widely shared assumption that undergirds Nisbett’s reliance on a test-driven evaluation of education is that achievement tests capture the essence of what a student is expected to learn in school and therefore represent a valid index of school effectiveness. They are of course made up of a sample of that content, and samples only approximate the whole. Of much greater significance is the fact that the items of these tests represent only those aspects of the content capable of being framed in the

form of questions that can be presented on the printed page in a multiple-choice format. Such tests encompass only a fragment of the range of learnings acquired by children, In a great many areas of academic subject matter there is little agreement that there exists a canon that states what specifically needs to be taught, and even less agreement that the content of achievement tests exactly matches what it is that students should be expected to learn. There is a tendency for Nisbett to speak of students as if they were a homogenous group, as if the developmental needs and abilities of the young child and that of the adolescent high school student are essentially the same insofar as the meaning of schooling, their relationship to it, and how instructional process is organized and should be measured. Experienced teachers can speak at length about the difference even between first and second grade learners, or the difference between high school freshmen and older students. Similarly, achievement tests are uneven in the degree to which their content covers what children actually learn.

Despite their limited sampling of content, such tests are useful for offering an overview, a kind of broad brush assessment that provides those in charge of educational systems with a form of stock-taking with regard to the level of learning taking place at various units of their school system. However, they should not serve, as they have become, the standard for evaluating teacher and school effectiveness. Yet, Nisbett proposes to measure teacher quality by achievement test scores, and he joins the chorus of those who advocate the adoption

of personnel practices that call for teachers to be hired and fired on the basis of such limited data. He also recommends that teacher pay rates be scaled according to the achievement test data of their students—even though in a different context he points to a study (that he himself coauthored) conducted with children that showed that when they are differentially rewarded for their performance in activities they originally engaged in spontaneously, i.e., out of personal interest, they lost their zest and intrinsic interest once a reward system was introduced. He ignores the fact that there are no available tests for rewarding the music, art, physical education, and even social studies teachers.

The criticisms of the stance advocated by Nisbett as well as the forecasts of the dire consequences of adopting that stance are by now well known and have been written and shouted by scores of protesting educators and researchers. Such a mode of viewing education and teacher competence will lead to teaching to the test, to a progressive, but in the end radical, redirection of classroom time and instruction in order to prepare children to perform well on achievement tests—and even to pressures that will provoke dishonesty in the administration and processing of such high stakes tests. If these tests exactly represented or even approximated sufficiently what children should be learning in school, then such a drift in mode of teaching and use of classroom time might be justifiable. Indeed, were it to happen, it would lead to a progressive redefinition of schooling as a tutorial program aimed at optimizing student

achievement test performance. In the end, schools would more closely resemble test training centers specifically geared to produce such outcomes. In so doing, the process of education would be radically transformed. It would lead to an enforced regimentation of instruction that would rob the intellectual and psychological climate of the classroom of its spontaneity and vitality, it would deprive students of the opportunity to learn and experience alternative adult models' distinctive ways of describing the world of ideas. In addition to becoming a place where children are trained to perform well on tests, schools would come to be further redefined as places where the performance of teachers is on trial. In the end, it would affect who and why people enter the teaching profession; it would discourage those who view schools as settings designed to promote complex aspects of the psychological growth of children, i.e., the multifaceted cognitive, social and emotional dimensions of their adventurous passage to adulthood, and attract instead those who aspire to be technicians trained in step-by-step methods designed to enhance test performance.

Nisbett expresses disappointment with education without offering a clear idea or information about how it is deficient or failing. Many of the broadsides frequently aimed at American education seem over-extended and misdirected. Some of this widely held dissatisfaction and concern may be based on observations of behavior patterns evinced in children that meet with disappointment and disapproval. Another source of discontent is attributable to an

earnest concern with the lagging educational progress of minority group children, which somehow gets transformed and described as being more widespread, even universal, partly to spare those who have already been victimized from being singled out further. Whatever the criticisms and disappointments with today's children, there is a tendency to blame teachers and educators, to use them as scapegoats. There is a failure to recognize that much of what is not understood or approved of in the behavior of today's children both in and out of school has come about as a result of patterns of social and technological change (i.e., media effects) that affect family structure and dynamics, the quality and values associated with child rearing, and ultimately the behavior patterns of the children themselves. This does not mean that all criticisms of education are unwarranted, that there are not sizeable numbers of teachers who are not functioning according to acceptable standards (difficult as it is to define them and then apply them). There are teachers who are burned out and others who should never have been encouraged or allowed to enter the profession. But the wholesale condemnation and call for unthinking reform and upheaval of the profession is wrong and damaging. Under the cloak of scholarly and scientific probing of the education world, Nisbett winds up joining these forces without contributing anything substantive toward improving education. It's not that the calls for greater accountability in education are so unreasonable, but that the way they are currently thought of being implemented would bring about unjust hiring/firing and invalid evaluation practices that would

damage the fabric of public education. The evaluation of educational programs is an extraordinarily complex, time-consuming, and costly proposition which is much less exact and definitive in its procedure than the achievement test-based procedures advocated by Nisbett.

The critical tone of this essay is based on the contention that Nisbett reinforces the wrong vision of how schools should be evaluated and joins in the mistaken belief that educators are responsible for the perceptions of children's decline in the investment in and respect for the acquisition of knowledge. However, the erudition, analytic reasoning and wide scope of coverage of his book should not be overlooked. Nor are the views and perceptions for which Nisbett is here criticized so steadfastly held by him. There are inconsistencies and contradictions in his presentation which betray less certitude than appears on the surface. Nisbett knows better than to embrace the measurement-driven perspective he advances so strongly. From time to time, he deviates from the narrow methodological posture which dominates the book. For example, although during much of his analysis he treats single IQ test scores as if they are definitive and infallible, there are times when he points to variations in the meaning and utility of subtest scores and acknowledges that no single test offers the last word in measuring intelligence. He highlights Flynn's evidence for generational intelligence gains but raises questions about the real meaning of the changes in some of the subtest scores reported by him. While championing the advantages of experimental

design and scientific rigor, he turns to ethnographic descriptions of early childhood experiences of African American children to provide a graphic view of their background. When reporting in great detail the universal praise earned by a single distinguished teacher, he shows how much more information there is to be gained about the educational process by the detailed study of a single teacher. Yet he is critical of educational researchers for not adhering to the strictures of experimental design and other modes of study that entail the use of large samples and necessarily brief quantitative forms of assessment. On the one hand he advocates policies that should be enacted to reward and sustain good teaching, and on the other acknowledges that the process of teacher evaluation in fact is exceedingly complicated. But in the end, he is nevertheless prepared to use achievement test score data to do the job. These ambivalences and recognitions of complexities tend to be swept away by the irresistible appeal of available measurement data.

Although throughout Nisbett gives expression to the standpoint that psychology's principal role in guiding the field of education is to contribute greater precision and measurement toward achieving its goals, there is a moment early in the book when he questions this premise. While setting forth to challenge empirical evidence pointing to the unchangeableness of intelligence, he stops to suggest that such a demonstration may not be necessary, exclaiming "By now if you have children you could be wondering why you spent

good money to move to a more expensive neighborhood with better schools, or for that matter why you squander money on books and orthodontia, waste time driving them to violin lessons and museums," In effect, Nisbett is acknowledging that the austere application of scientific method is not always needed to guide decision-making, that other less direct ways have been fashioned for estimating the psychological value of particular interventions. However, this realization does not lead him to go further, to consider the possibility that these alternative evaluative modes, though less systematic and less precise, may in the end be more valid. By virtue of their triangulating methods and longer and more relevant, though less consistently gathered, observational data base, they may be more capable of taking into account the complexity that is entailed in examining the school life of children.

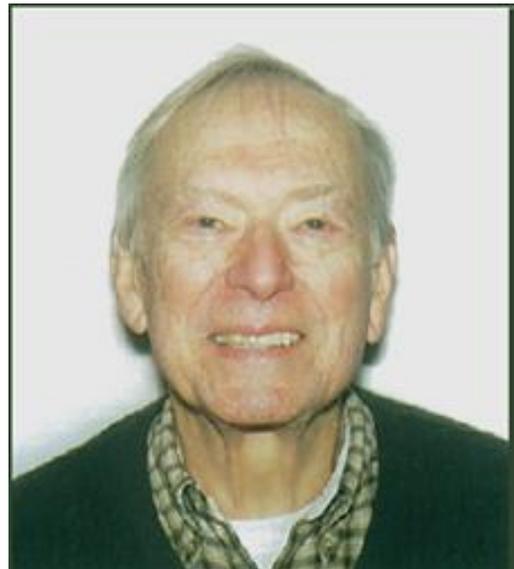
In marked contrast to the constricting influence of Nisbett's concern with precision and measurement in education is the impact of the heuristics generated by psychological research. Such research-derived experiential knowledge has given rise to a more differentiated and complex conceptions of human development that have served to expand and enrich our vision of the educational process. Instead of schools being conceived of as narrowly concerned with the instruction of prescribed academic content, they are viewed as psychological fields that influence multiple dimensions of children's psychological growth. When viewed thus, the impact of school experience ranges over a span that

encompasses such diverse realms as: problem-solving skills, thinking styles and scope and depth of curiosity, creativity and imaginativeness of thinking, communication and social skills, social values and sense of communality, and the quality of self confidence and self knowledge. Thus, many psychologists have come to think of the task of educating children as a massive and multi-faceted intervention in psychological development, the content of which far transcends academic curricula and that which achievement tests measure. Although his ruminations about the vigor and diversity of people's efforts to promote and enhance their children's development demonstrate Nisbett's awareness of how far-reaching, yet seemingly valid are such strategies, and how their complexity defies definitive scientific assessment, his ideas about education nevertheless remain dominated by the allure of measurement and the need to hold teachers accountable for children's failure to be smarter. His misplaced preoccupation with scientific rigor limits his comprehension of the complexity of the process of education and leads to a shortsighted readiness to adopt test-driven strategies of education reform.

About the Reviewer

Herbert Zimiles is Professor Emeritus in the Division of Psychology in Education of Arizona State University. Following doctoral work in experimental psychology, he turned to developmental psychology upon joining the Research Division of Bank Street College where he served as chair for

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evaluation, and call attention to the need to unchain investigatory methods from demands to be brief and overly systematic. He is the co-author of *The Psychological Impact of School Experience* (Basic Books, 1960) and co-editor of one volume of the Piaget Society series entitled, *Thought and Emotion: A Developmental Perspective*. (1986) He lives in Ann Arbor, Michigan.

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