

“Practical Intelligence” : Towards a New Conception of Intelligence

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I . Introduction

‘What is intelligence?’ This question, as a very complex one, is really important in education, which is also related to the nature of human being. With the conception of intelligence, intelligence quotient(I.Q.) test under the name of ‘science’ have had a strong influence on educational, social policy and idea. John Higham maintained, in his famous book or ‘Strangers in the Land’, that intelligence test gave scientific evidences to the American racism.

...A study of American intelligence concluded triumphantly that the intellectual superiority of Nordic group over the Alpine and Negro groups has been demonstrated. With such authority to sustain them, it is little wonder that not only many eugenicists but also a broad segment of literate opinion in America accepted the tenets of racial nativism as proved truths of science (Nativism means the Anglo-Saxon nativism).

We can call this kind of assertion as the biological determinism. However, today, many researchers and scholars criticized this kind of conception of intelligence and intelligence test. Leon J. Kamin argued that from the first use of IQ test to screen immigrants to the United States to the current argument which those on the bottom of the social order are genetically inferior in terms of intelligence, IQ Testing has never been free of ideological overtones and has, in effect, been an instrument of oppression against the poor. And S.J. Gould criticized the biological determinism of human intelligence in his very famous book, “The mismeasure of

man'. Also, some psychologists and anthropologists, who emphasized 'culture' in thinking 'what is intelligence?', tried to make a kind of new concept of intelligence with relation of human cognition (Gardner, 1983; Cole & Scribner, 1974; Scribner, 1984).² Certainly, recent comparative education research has been much more culturally sensitive.

I agree to these new trends. However, their conception of intelligence did not escape the boundary of biological conception completely. My primary aim in this paper is to propose some suggestions for a more powerful conception of intelligence, Practical Intelligence, in achieving the equality of education and overcoming shortcomings of modern education; in fact this try of my paper is drawn from recent researches in cognitive (though anthropological) psychology. And although my discussion will be focused on cultural cognitive research, some of my points might be intended to have more general applicability.

Now, in order to perform my aims, firstly, I will review some historical milestones and some modern and continuing themes in intelligent and educational theory and researches. And then, I will search some implications for a new conception of intelligence and its educational implications.

II. History of Intelligence Theory and Research

A. *Scientific Beginnings and Mental Testing*

Alfred Binet (1857–1911) was a first person who measured human mentality, using 'scientific' and psychological methods instead of the approaches of craniometry. He had experimented with some success, using measures of more complex mental processes involved in judgment and reasoning. He tried to construct a set of tasks that might assess various aspects of reasoning and judgment more directly. He devised his mental scale only for the limited purpose of his commission by the ministry of education: as a practical guide for identifying children whose poor performance indicated a need for special education or for suitably simplified instruction. In effect, Binet was asked to study the interaction of intelligence and instructional treatment.

The item found predictive of school achievement became the Binet–Simon scale and, through the translation by Terman, the

Stanford-Binet intelligence scale. The scale rapidly came into wide use in the United States, especially in education, in the hands of clinical, counseling and school psychologists. And many technical movements have been done by many researchers (we can refer to Jenkins and Paterson, Spearman, Guilford...) However, with intelligence operationally and conceptually defined almost solely on educational criteria without regarding the 'real life' of students, and with the use of mental tests in schools proliferating rapidly, misinterpretation and misuse set in. Stephen J. Gould indicates that the misuse of mental tests is not inherent in the idea of testing itself. He said that the misuse of mental tests arose primarily from two fallacies, eagerly (so it seems) embraced by those who wish to use tests for the maintenance of social ranks and distinctions: reification and hereditarianism (The mismeasure of man, 1981). Cronbach mentioned that to interpret mental tests as measuring 'general intelligence' was a flagrant overgeneralization.

Obviously, the results of comparisons among occupational, ethnic, socio-economic and other groups using the tests also fit with the current public attitudes. The prevailing interpretation produced the tendency to label children in schools according to arbitrarily defined levels along a single rank order continuum. Ability grouping became regular practice, and special education never really developed the truly alternative instructional treatments originally envisioned.

B. Critics of Standardized Testing and Some New Trends

There have been so many critics about social implication of intelligence test and the nature of intelligence. Sheldon H. White argued that the intelligence test became publicly acceptable because of its utility in allocating social opportunity, not because of its merits as a fair evaluation of the diverse aspects of human excellence.³ Of course, it is needless to say that the argument between Author Jensen and Leon Kamin is useful and important (I will not mention it). George Purvin mentioned that IQ tests which reflected the values and experiences of white middle class were used to sort and label children from all culture and ethnic backgrounds, to the obvious detriment of the poor and nonwhite.⁴ Michael Cole also argued that how children respond to a problem depends on their familiarity with the content of the problem, and that familiarity varies with the children's home culture in ways that we do

not know.⁵

If we examine the psychological procedures of intelligence and its testing more concretely, we can find that central to this psychological procedures are the requirements (a) to identify the tasks that individuals are working on ; (b) to demonstrate that the tasks embody the properties that require intelligent behavior; (c) to equate the prior experience with this and similar tasks. And when considered from the perspectives of cultural anthropology, these psychological requirements produce many difficulties ; that is, anthropologically, cultures are widely treated as socially organized designs for living that render the experience of people growing up in different part of the world systemically different, and if we think so, it can be recognized that prior experience in a given intellectual task produces inequality. In the course of this kind of thinking, we can see the tension between the universalistic approaches of the psychologist and the cultural-bound approaches of the anthropologists. Certainly, if we consider the anthropological aspects of intelligence, intelligence, as a cultural phenomenon, can be shown to depend upon cultural practice.

Finally, S.J. Gould's argument, opposed to biological determinism of intelligence, can help us to understand the intelligence. He said the follows in his famous book, 'The Mismeasure of Man'.

...the impact of human uniqueness upon the world has been enormous because it has established a new kind of evolution to support the transmission across generations of learned knowledge and behavior. Human uniqueness resides primarily in our brains. It is expressed in the culture built upon our intelligence and the power it gives us to manipulate the world. Human societies change by cultural evolution, not as a result of biological alteration. We have no evidence for biological change Biological evolution(Darwinian) continues in our species, but its rate compared with cultural evolution, is so incomparably slow that its impact upon the history of homo sapience has been small Cultural evolution is not only rapid : it is also readily reversible because its products are not coded in our genes.(pp. 324-325)

In conclusion, through these kind of trends, we can obviously see that the field of intelligence has evolved from one that concentrated primarily upon psychometric issues and biological as-

pects to the other that concentrated primarily upon social and cultural context.

III. Intelligence as a 'Practical One'

There has been concern, as we see above, for societal and cultural implications that models of intellectual function may have. Intelligence is a socially and culturally important attribute of individuals and, for better or worse, the perception of these attributes have major consequences for the treatment of people by their society. It seems to me that this growing interest in understanding the social importance of intelligence is not only due to its impact of social policy but also due to its theoretical importance to do so. Any developed theory of intelligence will have to specify the interaction of intelligence with social and cultural contexts.

Modern anthropology insists that cultures represent designs for living that are adapted to very different physical and historical circumstances. And the tendency to compare culture as though they were homogeneous units that could be lined up against each other has diminished in recent years. Investigators have singled out certain few sociocultural factors as potential causal mechanisms for specific phenomenon. Among these have been language, urbanization, formal educational institutions and literacy in addition to economic factors and ecological features.

Based on these kinds of thinking, a number of cognitive psychologists, opposed to the belief that cognitive competence is determined by very broad faculties, such as memory, formal operational schema, or intelligence, have proposed some new ideas. Gardner has offered the view that there are a number of distinctive ways in which one can be highly skilled. These forms of competence or intelligences reflect the degree of mastery of the distinctive forms of symbolic systems evolved and exploited by a culture as means for representing and acting on the world. That is, the storage of different cognitive contents (language, spacial, musical, kinesthetic, etc.) in separate region of brain leads to cognitive ability being differentiated by content area.⁶ The task for a theory of intelligence, in this view, is to characterize the structure, development and education of those forms of competence. Cole and Scribner (1974) suggest that cognitive performance reflects practice using or combining specialized "functional system", rath-

er than possession of generalized ability.⁷ Despite important differences among these theories, both have the implication that if poor performance at a given cognitive task indicates any cognitive deficits at all, it is only deficits of a narrowly defined sort. It seems to me that no general conclusions can be drawn about subjects' intelligence.

Along with above mentioned kind of conception of intelligence, we have to consider the aspects of real world or 'everyday life' in thinking the conception of intelligence. Anne Anastasi conceives intelligence as a quality of behavior. She mentioned that intelligent behavior is behavior that is adaptive, representing effective ways of meeting the demands of environments as they change. What constitutes adaptive behavior varies across species and with the context in which the organism lives(it means the real life world). And she says that more information is needed on the role of formal schooling, with its separation in time and place from everyday-life context, in the development of concept formation and abstract thinking skills. Also a related question pertains to the contribution of context knowledge to intelligent behavior, as well as to the relation of content to specific intellectual skills.⁸

John B. Carroll mentioned a similar opinion with Anastasi's view. He thinks that intelligence must be considered as a concept in the mind of a society at large. He argues that the domains to which intelligence is applied are basically threefold: academic, technical, and social and practical from the standpoint of the community. Academic and technical problems are those arising in schoolwork, and later, in the field of science, the professions and the occupational specialties. Practical problems are those arising in managing one's daily affairs, making a living and planning one's course of action — even planning one's life work. Social problems are those encountered in interacting with others — individual, groups and different cultures.⁹

Sylvia Scribner also argues that "practical thinking" refers to all thinking that is embedded in large activities and that functions to carry out the goals of those activities. The goals may involve mental accomplishments(e.g. computing the cost of milk delivery) as well as manual accomplishments(e.g. loading a truck). Thus the phrase of 'working intelligence' has two senses: it refers both to the intellect at work in whatever contexts and activities those may be, and, more narrowly, to the particular context of the dairy studies—the workplace(He also mentioned the methodo-

logical implications of functional approach : that is, a functional approach to cognition implies a methodological principle. If cognitive skill systems are closely related to the intellectual requirements of the practices which they are embedded in, one way to determine their characteristics is to study them as they function in these practices).

We have discovered that intelligence may be displayed in places other than the classroom, and that the everyday-life has to be considered in development of intelligence. And through these kinds of thinkings, we might come to the growing assumption about today's education that what explains academic performance may not be the same thing which explains the important behavior outside the classroom.

A. Towards a New Conception of Intelligence: Practical Intelligence

What is intelligence? We might think that intelligence is something or abstract concept through which man see and think the his world. In thinking of our world, culture and our experience as we saw them above, are really important. 'Practical Intelligence' is a suggestion for a new conception of intelligence that culture and man's experience are considered deeply in conception of intelligence. And this kind of thinking addresses an aspect of the task mentioned by Karl Popper, namely, that of examining intelligence not so much as a general adaptive quality of mind but as the forms of competence involved in dealing with cultural artifacts or technologies. This line of arguments have been developed by such investigators as Vygotsky, A.R. Luria and M.Cole and S.Scribner, who stress the role of culture in cognition.¹⁰

Based on these kinds of thinking, my point of view is that we have to consider both the aspects of man and the aspects of his world in order to understand 'what is the intelligence?' more desirably. Concretely speaking, intelligences; not intelligence, should be thought as something at a specific level of contents such as linguistic, musical, logical-mathematical, spacial etc., which is related to man's cultural and social contexts. Intelligences, as sets of Know-how, should not be thought as evaluative terms in all particular things. So, it is the very nature of intelligences that each operates according to its own procedures and has its own biological bases in the aspects of human beings. Along this conception, we have to consider the influence of real-world life or everyday life in the course of intellectual development. The focus on every-

day context or thinking involves an emphasis on the purposes for which people engage in activities and the pragmatic considerations involved in people's solutions to problems. And the ordinary experiences of everyday life—in the home, in the school, and in the working place—not only fill time, but also they shapes language, behavior and imagination.

IV. Implications for Education

First of all, this kind of conception of intelligence can throw light on the curriculum reform that can overcome the ethnicity of schooling. In other words, if we assume that the goal of education is to enhance the development of intelligence, my conception of intelligence implies that we should consider the experience of everyday life and specific content of social and cultural context in achieving the equality of education through overcoming of ethnicity.

According to my view that intelligences should be thought as specific contents, educating individuals to achieve their potential or to be an informed citizenry is not helpful; but achieving sufficient literacy to read a newspaper or discuss a current political problem is instructively precise. For the latter type of specific goal one can analyze the constituent intellectual skills and devise ways of assessing success (or degrees of success or failure); for the former grandiose goal, there is no implied evaluation metric.

In the case of teaching the fundamentals of literacy, for example, two notable successes of recent years have both taken shrewd advantage of the situations as they exist in particular host countries. One such case is Paolo Freire's efforts to teach reading to illiterate adult Brazilian peasants. Freire has developed a method in which individuals are introduced to key words which have strong personal value and feature a phonetic and morphological structure relevant to the learning of future words. This much is skillful linguistic pedagogy. A totally different but also highly successful approach to reading instruction can be found in the television programs "Sesame Street" and the "Electric Company" which have taught the fundamentals of reading to a generation of American schoolchildren. Once again, these procedures build upon tried—and—true methods of training reading.¹¹

If the goal of education is the development of intelligence and

intelligence has to be thought as something that is related to specific contents and real-world (everyday life) context according to my view, these thinkings can support Ira Shor's view of education as follows. The turn in pedagogy towards daily life can open vast resources of subject matter. For every class and discipline, themes lie around us. Further, the adaptation of study to the situations of mass life will make intellectual work of tangible relevance to students. This will be a novelty to them. Prior years of mass schooling have been ridiculously remote from their needs, so school itself has helped invalidate mental work. As it now stands, the power of the mainstream runs separately from the past power, a simple idea. It will also be catalytic.

For this project, some conceptual shapes or objectives are useful to bear in mind. One of the first operational shapes for liberatory teaching could be called contextual skill-development: this suggests that cognitive skills—reading, writing, comprehension, laboratory techniques, etc.—will be developed through a problematic examination of a real context, drawn from student life.¹²

V. Conclusion

Until now, I have tried to propose some suggestions for a new conception of intelligence. In summary, that is the considerations of specific contents, including the nature of human being biologically, and everyday life of social and cultural context in conception of intelligence. And those have been done by me through a kind of synthesis of anthropological and psychological aspects even though, I know, in near future a complete synthesis is not possible. It seemed to me, that kind of approach was reasonable. That is why I am sure that human intelligence is performed through the dialectical process between the internal (pure psychological process) and the external (social and cultural aspects).

This paper is just one try for a new conception of intelligence that make better education to be possible and help us to understand the human better. Shall we wait a genius who can throw light on the answer to the question 'What is intelligence?'.

Endnote

1. Leon J. Kamin, 1974, *The Science and Politics of IQ*, Hillsdale, New

Jersey : Lawrence Erlbaum Associates.

2. We can refer to a multiple intelligence on Howard Gardner (Frames of mind, 1983), a emphasis of functional system (Cole & Sylvia Scribner, 1984, "Studying working intelligence," in *Everyday Cognition*, by Barbara Rogoff).

3. Sheldon H. White, "Social implication of IQ," in Paul L. Houts, *The myth of measurability*, pp. 23-45.

4. George Purvin, 1974, "intro to Herrnstein 101," in *New assault on equality*, New York Harper and Row.

5. Cole & Scribner, 1974, "Culture and cognition," in *Culture and Thought*, New York : Harper and Row.

6. Howard Gardner, 1983, *Frames of mind*.

7. Michael Cole and Sylvia Scribner, 1974, *Culture and thought*, pp. 191-200.

8. Anne Anastasi, 1986, "Intelligence as a quality of behavior," in Robert Sternberg, *what is intelligence?*, pp. 19-21.

9. John B. Carroll, 1986, "what is intelligence?" in Robert J. Sternberg and D.K. Detterman, *what is intelligence?*, p. 50-55.

10. Vygotsky and Luria is Soviet psychologists, who used Marx's thinking in analyzing human psychological phenomenon. To have concrete information, refer to 'Mind in society: the development of higher psychological processes' (Vygotsky, 1978, edited by Michael Cole...) and "Cognitive development: its cultural and social foundations" (A.R. Luria, 1976)

11. P. Freire describes his successful efforts to teach reading to illiterate Brazilian peasants in his *Pedagogy of the Oppressed* (New York: Continuum Publishing, 1980).

On the approach to teaching used in *Sesame Street*, see G.S. Lesser, 1974, *Children and television: Lessons from Sesame Street*, New York: Random House.

12. Ira Shor, 1980, *Critical teaching and everyday life*, Boston, South end press, Chapter 3: Extraordinarily re-experiencing the ordinary.