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# A Preliminary Survey of Mongolian Six Years Old Children's Intelligence

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## Introduction

This paper is an attempt to confirm the potentials of Mongolian children. We try to compare the development of the intellectual levels of six years old children with their previous intellectual development levels. The survey results would be expected to contribute to the optimization of teaching methods for those children in the early stages of elementary school.

We need to identify the intelligence of Mongolians by measuring I.Q. in the present era of globalization where intellectual potential and intellectual growth have become one of the most critical factors for the economical development of the country. We have already tried to prove the Mongolian children's potentials in the previous paper in 2009<sup>1)</sup>. As the survey results have shown, the children in rural areas are considered to be superior in the fields of sciences and mathematics. We are going to further explore the other evidence to confirm their superiority. For this purpose, a number of educators have started exploring the various psychological factors, the intelligence of Mongolians, the backgrounds of the development of the Mongolian children, mental retardation of some children and the reasons of mental retardation of some children. Psychological measurements and evaluation have been introduced to identify the intellectual levels of adults and children in Mongolia.

The educational goals of Mongolian educational reforms are to rebuild the entire educational structure: to “develop our residents with the appropriate capacity on intellectuality, morality and health; humanities; ability to individually study and live.” Those goals presuppose the individual differences. On the basis of the identification of the individual differences of children's scientific knowledge and intellectuals, this educational reform is directed toward the standardization of global development. For this goal, it is necessary to measure the intellectual development levels of Mongolians. There should be some unique development of children, comparing with other nations of the world.

## 1. I.Q. test and Mongolian Education

Psychological terms and method would be useful for identifying the uniqueness of Mongolian children. So we used D. Wexler I.Q. test because it was regarded as reliable for the widely accumulated standardized scale and samples. We would be able to identify the Mongolian children's I.Q. scores and its position in the world in terms of Wexler's scales, which include the optimization of the socio-cultural bias. There is a widely acknowledged agreement about its reliability in these days: “Intelligence is influenced by environmental conditions rather than innate dispositions.” Wexler's scale is also based on the consensus about the cultural influence on the intelligence. He assumes that the intellectuality is ‘the general

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ability to work smartly, think optimally and well understand the matters of life condition; briefly, it means to “allocate the power correctly when contact with the environment” /8.55/. Wexler’s test is not confined to the speed for completing any intellectual tasks but it also involves the ability to “accustom.” Thus, it is a useful scale to identify the individual characteristics of the children.

1. Wexler’s test contains verbal and non-verbal tasks. So it is useful to measure the various kinds of intelligence.
2. Various factors including cultural heritages, traditions, and experiences strongly affect the intelligence of children. If we use our survey data to compare with other countries’ data, we would be able to find various potentials with the intelligence of children.
3. On the basis of the results of Wexler’s test including various sides of human intelligence, it would be possible to optimize our teaching methods for teachers. In addition, the children would be able to find their future jobs and parents would give appropriate advice for their children.
4. First, we need to consider the socio-economic conditions of our country before we attempt I.Q. test because most of I.Q. test is composed of the verbal test. Wexler’s test is the exceptional in terms of its involvement of socio-economic conditions in its test scales. It is useful for adequately measuring Mongolian children’s I.Q.

It is difficult to renew our current educational structures unless educators study the scientific theory and practice of psychology, which would make it possible to provide adequate basic training for pursuing the excellence of children’s cognitive development.

Today, theory and practice of intellectual development of the scientific field of psychology have developed rapidly in Mongolia. Researchers such as D. Sanjjav, B. Bor /1991/, L. Urantsetseg, Ch. Tumendelger /1990/, J. Batdelger /1994/, D. Vanchigsuren /1995/, O. Myagmar /1988/, P. Tserendondov /2004, 2005/, D. Erdenechuluun /2005, 2006/, G. Sarantuya /2001, 2005/ and B. Tuya /2006/ have contributed to the development of theory and practice of cognitive and character formation of individual children /2.7/.

We would be able to address that contemporary Mongolian education has the objectives as follows: to prepare children for life skills, to develop children’s responsibility by accomplishing the thorough development of general knowledge, ability, speaking, intelligence, concentration and the idea of stereogram of the intelligence.

We think that we need to provide a new test, which contains ballanced content and can partially and entirely evaluate the developmental levels of the main actions: thinking, judging, quick response, invention, memory saving speed, time, concept shaping, specifics of direct acknowledgement, concentration and the idea of stereogram etc./ of intelligence. B. Tuya and others standardized the Intelligence Structure Test /IST – Intelligenz Structur Test/, developed by German psychologist R. Amthauer, for 16-21 years old high school students. Thus, they provided an opportunity to study the intelligence analysis and evaluation from the experiences of other countries by enriching the fund for evaluating intelligence of Mongolian children on the basis of appropriate and qualified methodologies.

## 2. Preliminary results of the intellectual development level of Mongolian six years old children of urban and rural areas

### (1) Sampling of the survey

Our survey objective is to provide basic facts by studying some parts of intellectual development levels of Mongolian six years old children in terms of verbal and non-verbal tasks of Wexler. Survey covers 112 children of urban and rural areas. 50 percent of the total children came from the teams, soums (villages) and provinces; and 50 percent of the total children came from a city.

#### 1) Composition of samples

50%	30%	12%	8%
-city	-province	-suum	-team

2) Average performances of non-verbal tests of the children in rural area. (Figure-2)

88.20%	80.30%	73.50%	86.60%
-Integrating forms	-observing shapes	-shaping forms	-finding the incomplete parts

3) Average performances of the non-verbal tests of the children in urban area ( Figure-3)

80.30%	75.20%	65.20%	78.20%
-Integrating forms	-observing shapes	-shaping forms	-finding the incomplete parts

4) Average points of the verbal test scores of the children in rural area. ( Figure-4)

60.35%	65.60%	57.60%	70.20%
-Usual knowledge	-Understanding ability	-Counting ability	-Dictionary

5) Average points of the verbal test scores of the children in urban area. ( Figure-5)

52.40%	48.60%	42.30%	68.60%
-Usual knowledge	-Understanding ability	-Counting ability	-Dictionary

6) General IQ level of girls. Figure-6

The mean score of general IQ levels of the rural girls is 120, which is highly above the average

7) General IQ level of boys. Figure-7

The mean score of general IQ levels of the rural boys is also 120, which is highly above the average

Total percents of verbal and non-verbal test results of the total children who get involved to this survey indicates the excellence of the rural children. Non-verbal test includes the tasks, of using pictures and other accessories, which would include culturally biased operations. Regarding verbal test, its task attempts to exclude the culturally biased topics for Mongolian children although the results of the verbal test scores were lower than those of the Non-verbal test.

**3. Speculating the results of the intellectual development of Mongolian six years old children in urban and rural areas**

As has been noted, the I.Q. test scores of children in rural areas made better achievements in both the verbal and non-verbal abilities. As the previous study has shown, children in rural areas made better achievement than those in urban areas in terms of teachers' evaluation. The results of this survey also proved the excellence of the children's intelligence in rural areas. We need to speculate the reasons why the children in rural areas resulted in the better average scores.

We need to examine an assumption to inquire about the reasons. Six years old children mean the age of educational transition for the children from families to schools. It is assumed that the children are naïve in terms of their unfamiliarity with the school works. It should be assumed that they have the potentials rather than achievements. That is the reason why I.Q. test results are assumed to represent the primary conditions of children's potentials. It is plausible that there are intensively accumulated environmental conditions accelerating children's developments of I.Q. in rural areas. What are environmental conditions useful for the individual's development? This question is important for the further inquiry.

First, there should be some life units useful for the development of I.Q. The chores in the individual's home would help developing the intelligences of the children. So we need to explore what chores would help developing I.Q. of the children. What is the difference between rural life and urban life? The lives of rural and urban obviously show the quite contrast in Mongolia. A number of families in rural monads have cattle on the huge prairie. The children are always busy helping their parents works. They are in charge of feeding and caring sheep, cows, goats, and other various kinds of cattle. They are good at counting the numbers of cattle. They are good at identifying not the shapes of the natural environment but also

the individual cattles. Those cognitive activities are not formally organized but naturally accustomed. Those activities are not forced by others but volunteered to do as their own works. Now it is necessary to inquire about the elements of life activities, which work to develop the children's I.Q.

It should be deliberately examined what factors cause the sound effects for the children's development. There are many approaches to collect the reliable data. We assume that the anthropological inquiry is needed to identify the life world of the children in Mongolia because the segmented data of the totality of the individual development would not help the constitution of the life situation of the individual child. There should be a story intrinsically persistent for understanding the causality of the children's development. We need to know the meanings of children's everyday lives in rural areas.

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