Norming of Tests with Primary One Pupils

*Poh Sui Hoi and associates**

Researchers who use tests developed in countries other than their own are faced with two fundamental problems. Firstly, some items in the test may have cultural-linguistic biases. Secondly, the reference group on which the foreign test norm has been established can be rather dissimilar to the local group if the same test is to be used. These may render the validity of the test results suspect.

This research note reports an attempt to collect data for establishing norms for Primary One pupils. Primary One pupils, at the time of testing, were in the age range between 6 years: 4 months and 7 years: 10 months.

The Instruments

The instruments were chosen after due consideration of their reported validity and reliability and the children's maturity level, concentration span and endurance limit. A review panel scrutinized the items of the instruments with the view of modifying them where necessary to suit the local context.

Slosson Intelligence Test (SIT)

This is a screening intelligence test for the individual, specifically designed for teachers, principals, guidance counsellors, psychologists, psychometricians, social workers, and other responsible persons who often need to evaluate an individual's mental ability. The median correlations with the Stanford Binet Intelligence Test (SBIT) and Wechsler Intelligence Scale for Children (WISC) are .90 and .75 respectively. For this study 55 items for the age group 4 years: 0 months to 12 years: 0 months were administered. The original sequence of the items was retained.

Raven's Standard Progressive Matrices (SPM)

This is a widely used and intensively researched non-verbal test of mental ability. High test-retest reliabilities (.80 and above) have been reported. Correlations with Wechsler and Binet scales range from .54 to .86 and correlations with scholastic achievement some time after its administration were reported to be ranging up to .70. As this test is purported to be culture-fair, no modifications were made; it was administered in its original form.

Slosson's Oral Reading Test (SORT)

The Oral Reading Test comprises word lists based on standard readers used in American schools. A correlation of .96 was obtained with the Standardized Oral Reading Paragraphs by William S. Gray. The first 120 words of the 200 in the original test were used for this study.

Gates — MacGinitie Reading Test, Readiness Skills. Subtest 1 — Listening Comprehension

The test was normed on a sample of 4500 children in the USA. The median discrimination index for the items in the Listening Comprehension Subtest was .72 and the KR20 coefficient was .72. As many as the original 20 items showed cultural elements, 10 items which seemed to have little cultural bias were used after slight modifications.

Banham's Maturity Level for School Entrance and Reading Readiness: Individual Record Checklist

The checklist consists of 25 items on five aspects of maturity. The validity of this instrument was evaluated by the contrast groups method. Significant differences were reported between the maturity scores of high and low groups in grades K and 1. Coefficients of stability were .53 for Grade K and .69 for Grade 1. After slight modifications in the wording of some items, all items were used.

The Sample

The sample consisted of 209 pupils (106 boys and 103 girls) in the Primary One classes. This sample was drawn on a stratified random basis by a two-stage process. Stratification was first done according to the type of schools (i.e. Government Schools

Test	Number of items used	Whole Sample (N = 209)				Boys (N = 106)			Girls (N = 103)			F-value*
		Mean	SD	Median	Skewness Index	Mean	SD	Median	Mean	SD	Median	
Slosson's Intelligence Test	55	14.5	7.1	13.0	0.63	13.8	6.9	12.75	15.1	7.3	14.3	1.74
Standard Progressive Matrices	60	19.3	9.0	17.3	0.67	19.8	9.0	17.0	18.7	8.5	17.2	0.75
Slosson's Oral Reading Test	120	15.3	15.9	10.75	0.86	14.0	14.4	10.25	16.7	17.3	11.0	1.61
Gates-MacGinitie Listening Comprehension Test	10	4.9	2.2	5.4	−0.68	4.7	2.0	5.4	5.1	2.3	5.0	1.61
Banham Maturity Checklist	25	22.1	3.3	23.6	−1.36	21.6	3.2	22.8	22.6	3.3	24.8	4.99

* All F-values are not satistically significant (p > .01) for mean comparison between Boys and Girls.

or Government-Aided Schools). In line with the policy of a unified education system, schools of the English Stream were chosen. Sixteen schools were drawn at random from 164 Government Primary Schools, two from 19 Government-Aided Schools and one from 10 Government-Aided Full Schools. One Government school declined to participate in the study. From these selected 18 schools, a random process was used to select pupils from Primary One classes to make up the required number of boys and girls.

Data Collection

Data collection extended over a period of several months and to ensure a high degree of consistency in the testing procedure only the staff of the Department of Educational Testing, Guidance and Counselling were involved. Before data collection, a briefing session was organized to standardize the procedure of administering the tests. After the first week of testing, testers met to provide feedback to the group to consolidate the testing procedure.

Each child selected for the testing was given the tests *individually* in a reasonably quiet room with little distraction. Recording of the responses was done inconspicuously so as not to arouse unnecessary anxiety in the child. As the testing took about

90 minutes, a break was given at an appropriate time so that the child's performance would not be affected by fatigue. The form teacher of the child tested was requested to complete the Banham Maturity Checklist based on her observation of the child's behaviour in class.

Singapore Norms

Using the raw scores obtained by the 209 Primary One pupils, two types of derived scores have been generated by the computer. These are the percentile rank and T-score. These norms will be useful for research and administrative purposes in place of the American and British norms in the original version of the tests.

The table shows the means, standard deviations and medians for the five tests. It should be noted that there are no significant differences (p > .01) between boys and girls and hence the norms for the sample as a whole can be used for either sex. It has also been observed that, as indicated by the skewness indices, the Slosson's Intelligence Test, the Standard Progressive Matrices and the Slosson's Oral Reading Test, have positively skewed distributions, whereas the Banham Maturity Checklist and Gates-MacGinitie Listening Comprehension tests have negatively skewed distributions. ∎

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