

## THE SUITABILITY OF SCHOOL FEELING AND THOUGHT SCALE IN APPRAISING INTELLECTUAL ABILITY

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*The objective of the study was to determine the suitability and validity of the School Feeling and Thought Scale in appraising intellectual ability of Malay school children. Subjects were 100 pupils, 53 boys and 47 girls from a primary school in a small town in Negeri Sembilan, a state in Malaysia. Three instruments were administered to the subjects, namely, Raven's Standard Progressive Matrices (Raven, 1965), the SFT Scale (Clifford, 1988), and the Wechsler Intelligence Scale for Children-Revised (Wechsler, 1974). The results indicated that the translated version of the SFT had a modest internal consistency ( $\alpha = 0.75$ ) and a high test-retest reliability. The SFT scores did not show any significant difference between gender. The three subtests of the SFT showed from moderate to high and significant correlations with each other indicating that the items in the three subtests were of similar construct. The SFT also showed positive and significant correlations with intelligence tests ranging from 0.56 to 0.70 ( $p < .001$ ). The SFT was also able to discriminate those with high intellectual ability from those with low intellectual ability. The implications of the findings were discussed in terms of the suitability of the SFT in appraising intellectual ability of the local school children.*

In the 30 years follow-up report of his research on intellectually gifted children, Terman (1959) suggested implicitly that besides internal factors, external factors or nonintellectual factors had to be considered for intellectual ability appraisal. He found that the difference between the most and the least successful men among his 1925 study of gifted children is not in intelligence but is due to the difference in personality factors.

Roe (1952) conducted an intensive study on the characteristics of 64 eminent scientists and found that besides long working hours and fewer vacations, they would rather be doing their work than anything else. Other researchers suggested that imminent adults are self initiated and are guided by self generated standards of excellence (Chambers, 1964; Helson, 1971; Nicholls, 1972). In Teverson Project, Burden (1979) observed that they

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...tended not to see it as being particularly advantageous to work harder..., [and]... this reluctance stemmed from some kind of implicit recognition that it was sometimes not quite the done thing to stand out intellectually—both in terms of the reaction of their peers and of their teachers. It is though they had independently gauged an optimum level at which it was acceptable to 'shine' but beyond which lies a potentially dangerous *no-man's land of social ostracism* (pp. 11-12).

In addition, there are many research findings now supporting the view that children's perception of their own ability mediate achievement behaviour (Blumenfeld, Pintrich, Meece, & Wessels, 1982). The way children perceived their ability and their attributions of success and failure can have consequences on their motivation towards school work (Clifford, 1986; Dweck, 1986). It is, therefore, the children's self-appraisal that could become an additional criterion for assessing intellectual capacity.

There appears to be a disagreement about the age at which such self-assessment of nonintellectual factors should be administered. Data from research conducted in Britain (Crocker & Cheeseman, 1988), and North America (Nicholls, 1978; Stipek, 1981) suggested that it was not until 10 years or older that children can assess themselves accurately. In the most recent study by Blatchford (1992) using children of various ethnic groups in London, concluded that children at the age of 11 appear to be "more realistic and more accurate judges of their own attainments, when accuracy of self assessment is assessed in terms of agreement with standardized tests" (p. 41).

Although there is substantial evidence for the nonintellectual factors to be considered as additional criteria in the appraisal of intellectual ability, they are not without complications. The correlation between academic ability and these nonintellectual factors is limited (Dellas & Gaier, 1970; Torrence, Bruch, & Morse, 1973). In addition, there is also lack of relationship between the nonintellectual factors during childhood and during adulthood (Nicholls, 1972). Thus, the subjectivity in the measurement of these factors and the lack of reliability and criterion-related validity force psychologists and educationists to abandon them temporarily. However, in the last decades, the development of child's self rating scale is the SFT.

### **School Feeling and Thought (SFT) Scale**

SFT scale developed by Clifford (1988) is, in some respects, similar to Kuhl's (1985) Action-Control subscale. Both are based on

Rotter's (1966) Locus of Control scale and is an attempt to measure the extent to which an individual responds constructively to failures or misfortunes through self-report. Contrary to Kuhl's Action-Control subscale developed for adults, SFT focuses on school failure primarily for 7 to 17 years old school children.

The SFT consists of 36 items with 6-point agree-disagree Likert scale. It yields three subscale scores: Feeling about Failure (Affect or Aff), Action about Failure (Action or Act), and Preferred Task Difficulty (PD). The time taken to administer SFT is about 25 minutes with the researcher reading aloud every item to the children.

The objective of the present study is to determine the stability and, to some extent, the validity of the SFT in appraising intellectual ability of the Malay children. Bearing in mind that the SFT has been developed in America, it is essential to undertake a study to ascertain that the Malay versions of these instruments have the ability to assess intellectual ability of Malay children.

## METHOD

### Sample

One hundred pupils, 53 boys and 47 girls from a single primary school in Rembau, were the respondents of this pilot study. The average age of these children was 11 years and six months. As for the boys and girls separately, the average age was 11.7 and 11.6 years, respectively. The majority of the respondents were coming from rural areas.

### Instruments

There were three instruments used in this study. They were Raven's Standard Progressive Matrices (RSPM) (Ravens, 1965), Wechsler Intelligence Scale for Children—Revised (WISC-R) (Wechsler, 1975), and SFT Scale (Clifford, 1988). RSPM, and WISC-R, are intelligence tests. Their reliability and validity have been widely published.

#### *Reliability and Validity of SFT*

##### a. Reliability

The SFT was standardized using 233 students whose age ranges from 10 to 12 years. They were enrolled in two separate public schools in a Midwestern state of U.S.A. The alpha coefficient for the original 36

items is .90. For the SFT subscales, the alpha coefficient for Affect, Preferred Difficulty, and Action is 0.85, 0.88, and 0.80, respectively.

#### b. Validity

Responses to the original 56 items in SFT scale were analyzed using factor analysis with varimax rotation. The analysis resulted in three factors, namely, Affect, Preferred Difficulty, and Action. Items with minimal factor loading of 0.40 were retained. In the final form of SFT, each subscale contains nine items.

The SFT score was validated using selected items from well known achievement tests: Iowa Tests of Basic Skills (ITBS: 1978) and Iowa Test of Educational Development (ITED) which formed an inventory called Academic Risk-Taking (ART) Measure. The ART consisted of mathematics, spelling, and vocabulary. The SFT has modest correlation with ART. For the fifth grade (11 years old) the correlation coefficient is 0.48 ( $p < .001$ ) for vocabulary, 0.41 ( $p < .001$ ) for spelling, and 0.37 ( $p < .001$ ) for mathematics.

The SFT was translated and administered to 194 fourth grade Taiwanese students (Clifford & Chou, 1991). The translated version of SFT has a reliability of 0.87. The reliability for the subtests is 0.72 for the Affect, 0.82 for the Preferred Difficulty, and 0.86 for the Action.

### *Translation Procedure*

#### a. Translation Panel

The SFT was initially translated into Malay by the researcher and then given to a translation panel of 5 local experts; two associate professors in Malay Studies, two lecturers in Educational Psychology, and a teacher with 12 years experience of teaching Malay children in a rural area.

#### b. Item Analysis and Back Translation

After receiving separate comments from each translation panel member, the researcher made the necessary amendments to the wording as suggested by the panel. The SFT was then administered to a class of 25 primary school pupils in a school near University of Pertanian, Malaysia. The respondents were instructed not only to respond to every item but also to mark any item that they did not understand. Four items

in SFT, namely, item 2, item 10, item 13, and item 21, needed rewording.

The final Malay version of the SFT was given to five final year Bachelor of Education (teaching of English as second language) students in University of Agriculture. They translated each item in the instruments back into English. This 'back translation procedure' is essential to ensure that the content of the final Malay version of SFT had not deviated from the original English version. From the 'back translation', the researcher found that all the items had been correctly translated.

## Procedure

The RSPM and the SFT were administered to the pupils during the first visit to the school. The researcher administered WISC-R individually to the respondents.

## RESULTS

The data were analysed using a computer software package known as SPSSPC+. Statistics such as *mean*, *standard deviation*, *correlation*, and *t-test* were used in this study.

### The Reliability of SFT

The internal consistency reliability of the translated version of SFT is modest. The Cronbach alpha coefficient for all 27 items is 0.60. A Cronbach alpha coefficient of 0.75 can be obtained if 3 items are deleted. Furthermore, the deletion of these items will also improve the reliability. The reliability for Affect increases to 0.60 from 0.55, for Preferred Difficulty to 0.67 from 0.59, and for the Action to 0.55 from 0.43. As these three items share a common feature, they are all negatively worded. The deletion of these items for further administration seems sensible. The final items for SFT are, therefore, reduced from 27 to 24.

A test-retest (after a lapse of 30 days for 30 pupils) data indicate that there is no significant difference in the total score of SFT. The mean score for the second administration for the total and two subtests (Aff & Act) are higher in the initial administration, but they are not statistically significant (Table 1).

Table 1

*Test-retest result of SFT (N= 30)*

SFT	<i>First</i>		<i>Second</i>		<i>t</i>	<i>r</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Aff	25.51	5.23	27.48	5.88	-1.37	0.79
PD	33.35	5.01	34.98	6.11	-1.12	0.84
Act	26.18	4.12	28.15	4.87	-1.57	0.77
Total	87.03	10.45	88.64	8.88	-1.44	0.89

*df=28, \*p<.05***Gender Differences in SFT**

The data for 100 respondents indicate that score for SFT (with 24 items) ranges from 66 to 115. Inferring from the descriptive statistics; *mean* = 91.04, *standard deviation* = 11.19, *median* = 93.5, and *mode*= 90, the distribution of the SFT score is near normal. There is no significant difference in the score for the boys and the girls (Table 2). The subtests of SFT, that is, Aff, PD, and Act also have similar statistics as the total score.

Table 2

*Gender differences in SFT*

SFT	Boys ( <i>n</i> =53)		Girls ( <i>n</i> =47)		<i>t</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
Aff	26.71	7.37	27.22	5.78	-0.30
PD	37.26	4.81	35.65	6.29	0.31
Act	28.67	5.14	26.30	3.84	0.08
Total	92.63	9.79	89.17	12.61	1.09

*df = 98, \* p < .05***Intercorrelations of SFT subtests**

The three subtests of SFT have modest to high and significant correlations with each other (Table 3). The *R* square of SFT with its subtests ranges from 0.73 to 0.86. Based on these data the SFT and its

subtests share more than 75 per cent of its variation with its subtests in measuring the SFT construct.

Table 3

*Intercorrelation of SFT with its subtests (N= 100)*

SFT	I	II	III
I Aff	-	-	-
II PD	.74*	-	-
III Act	.54*	.76*	-
Total	.86*	.93*	.87*

\* $p < 0.001$

### Predictor of Intelligence

In order to be able to appraise intellectual ability, SFT scores have to be strongly correlated with IQ scores. The correlations of SFT scores with intelligence tests (RSPM & WISC-R) are significantly modest ranging from 0.55 to 0.69 (Table 4). The relationship of the SFT score with the WISC-R is stronger than with RSPM.

Table 4

*The correlation of SFT with intelligence tests (N= 100)*

SFT	WISC-R	Raven's SPM
Aff	.64*	.58*
PD	.62*	.56*
Act	.59*	.56*
Total	.70*	.64*

\* $p < .001$

It is also crucial that SFT score should be able to discriminate those with high intellectual ability from low intellectual ability. The median score of Full IQ score (i.e., 104) is used to differentiate those with high IQ (104 & above) with those of low IQ (103 & below). Those with high IQ are having significantly higher SFT scores than those of low IQ (Table 5).

Table 5

*The differences of SFT score between high (n= 52) and low (n= 48)IQ*

SFT	IQ	<i>M</i>	<i>SD</i>	<i>t</i>
Aff	High	38.23	6.88	5.29*
	Low	30.69	5.25	
PD	High	39.83	5.31	5.91*
	Low	33.38	5.60	
Act	High	42.15	5.72	5.29*
	Low	35.21	7.36	
Total	High	120.21	15.48	6.83*
	Low	99.27	15.12	

*d.f* = 98, \**p* < .001

## DISCUSSION AND CONCLUSION

The findings of the study indicated that the SFT was a reliable and valid instrument in appraising the intellectual ability of the Malay primary school children. The reliability of the instrument was moderately high ( $\alpha = 0.75$ ) with the omission of three negative items. The instrument also showed a high test-retest reliability with no significant difference between the two test scores. The high reliability of the instrument showed that the items in the scale were well chosen and the respondents had no difficulty in understanding the meaning of the items.

The validity of the instrument was shown by the high intercorrelation of the three subtests which ranged between 0.73 to 0.86. This indicates the construct validity of the items in the three subtests. The items in the three subtests successfully measured what they were intended to measure, i.e., the intellectual ability of the subjects.

The moderately high correlations of the SFT with standardized intelligence tests, namely, RSPM and WISC-R (ranging from 0.56 to 0.70), respectively, also indicated its rather high degree of validity. The positive correlations of the instrument with valid intelligence tests showed that the SFT could be used as a valid measure of intellectual ability of children.

Another positive characteristic of the instrument was its ability to discriminate children with high intellectual ability from those with low



intellectual ability. Children with high IQ scores tend to have high SFT scores, whereas, those with low IQ scores also have low SFT scores. The discriminating ability of the instrument will facilitate teachers and other practitioners to identify children with high and low intellectual ability.

As a self appraisal instrument, the SFT was found to have no significant difference when administered to boys and girls. This indicates that the instrument was suitable for administration irrespective of gender. This was an added advantage for the instrument as there was no need for a separate instrument to be prepared for boys or girls.

The results tend to support findings of earlier researchers (Blatchford, 1992; Blumenfeld et al., 1982) that children's perception of their own ability were accurate and realistic. This will add a new perspective to research where a wide variety of instruments could be constructed based on children's perception.

In view of the above findings, the SFT could be accepted as a valid and reliable instrument in appraising the intellectual ability of the Malay school children in Malaysia, although further research is needed to examine its validity and reliability.

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