

The Effectiveness of Teacher Ratings in Identifying Potential Intellectually Gifted Malay Children

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ABSTRAK

Dalam kajian ini, keberkesanan skala 'Scale for Rating Behaviour Characteristics of Superior Children (SRBCSS) diuji sebagai alat yang berpotensi untuk mengenalpasti kanak-kanak melayu yang pintas cerdas. Murid yang mendapat skor 46 ujian 'Raven's Standard Progressive Matrices (Raven's SPM) diuji dengan ujian WISC-R. Daripada 303 responden, 101 mendapat skala IQ 120 atau lebih dan dikelaskan sebagai pintas cerdas. Guru diminta menilai responden dengan menggunakan SRBCSS yang diterjemahkan ke Bahasa Melayu. Dapatan kajian ini menunjukkan bahawa guru perlu hanya beberapa sub-ujian yang berkaitan jika mereka hendak dilibatkan dalam proses mengenalpasti kanak-kanak pintar cerdas.

ABSTRACT

In this study, the effectiveness of the Malay version of scale for rating behaviour characteristics of superior students (SRBCSS) was tested as a potential tool for the identification of intellectually gifted Malay children. Pupils with a score of at least 46 on Raven's standard progressive matrices (Raven's SPM) were given the WISC-R test. Of the 303 respondents, 101 scored a full-scale IQ of 120 or more and were classified as intellectually gifted. Teachers were asked to rate the respondents using the translated version of SRBCSS. The findings of this study suggest that teachers should be given appropriate SRBCSS subtests if they are involved in identifying intellectually gifted children.

INTRODUCTION

A number of researchers have reported that intelligence tests and rating by teachers are the two most commonly used tools in the selection of intellectually gifted children (Jenkins 1979; Alvino *et al.* 1981; Yarbrough and Johnson 1983). In a landmark study by Pagnato and Birch (1959), teachers could only effectively identify 50% of the gifted children. Their finding has stimulated many researchers to validate the efficiency and effectiveness of teachers' ratings.

In an identification programme, teachers are asked to nominate children without any guidelines, or they are asked to rate each student using a given set of rating instruments. Teachers' ratings, following guidelines, should be more effective and efficient than teachers' nominations (Renzulli and Hart-

man 1971; Borland 1978).

A study by Solomon (1979) indicated that by using a checklist, teachers' identification efficiency increased from 25 to 50%. On the contrary, Ashman and Vukelich (1983) found that the effectiveness of teachers' ratings was 20-81% and efficiency was 54-71%. It is interesting to note that Gear (1975) found that teachers could be trained to improve their efficiency in identifying gifted children. Teachers who attended a special training programme identified 86%, while teachers in the control group identified only 50% of gifted children. Since the cost of training all teachers is high, an initial study should be conducted to find the type of teacher who is highly effective in identifying intellectually gifted children so they can be trained to identify such children in the classroom.

Various types of teacher rating are being developed and tested. The most widely used teacher rating is the scale for rating behaviour characteristics of superior students (SRBCSS) developed by Renzulli *et al.* (1971), who noted that SRBCSS is intended to provide an objective aid to guide teacher judgement in identifying gifted children. Rust and Lose (1980) found that the SRBCSS was not successful in aiding teachers if the criterion of giftedness is based on IQ scores. In light of this finding, Burke *et al.* (1982) suggested that SRBCSS must be extensively studied. Therefore, the effectiveness of SRBCSS, especially the translated version, must be determined before it can be utilized extensively in identifying intellectually gifted Malay children.

METHODOLOGY

Selection of Respondents and Data Collection

The study involved 1047 Primary Six Malay students studying at 16 primary schools in Tampin district. The respondents of this study were those with a score of at least 46 on the Raven's standard progressive matrices (Raven's SPM) (Raven 1965). Raven's SPM has been widely used to screen and identify intellectually gifted children for educational and research purposes (Pegnato and Birch 1959; Martinson and Lessinger 1960; Rust and Lose 1980). For this study, a score of 46 was proposed so that all potential intellectually gifted children would be included (Abd Majid 1994).

The number of students with a score of 46 on Raven's SPM was 303 (149 boys and 154 girls). They were the respondents for this study. The researcher administered WISC-R (Wechsler intelligence scale for children-revised) to all respondents. The criterion for intellectual giftedness in this study was based on IQ scores generated by WISC-R; those with an IQ score of 120 or above were categorized as intellectually gifted. There were 101 pupils (56 boys and 45 girls) with an IQ score of 120 or above.

While the researcher administered the WISC-R, teachers of the respondents were asked to rate the respondents using the SRBCSS. Each respondent was rated by

four teachers, Malay, English, mathematics and class teachers.

Instruments

There were three instruments used in this study, the WISC-R, Raven's SPM and SRBCSS. The WISC-R and Raven's SPM are intelligence tests. The SRBCSS, on the other hand, is a teacher rating scale.

The WISC-R is an individually administered intelligence test published in 1974. It consists of 10 subtests: information, comprehension, arithmetic, similarities, vocabulary, picture completion, block design, picture arrangement, object assembly and coding. The instructions and the items were translated into Malay using the procedures proposed by the manual. It was then pre-tested using 100 Malay children of similar age (Abd Majid and Othman 1995). The test-retest reliability of the Malay version of WISC-R ranged from .65 to .89. The full-scale IQ score, the criterion for giftedness in this study, has a reliability of .91. The criterion for intellectual giftedness is based on the IQ score generated by WISC-R; those with an IQ score of 120 or above were categorized as intellectually gifted.

Raven's SPM was first published in 1938 and designed to assess the mental ability of people of all ages and diverse educational and cultural backgrounds. The scale consists of 60 items. The tester is required to comprehend meaningless figures that demand a systematic method of observation and reasoning. The internal consistency and the stability of Raven's SPM is reported to be .6-.97. For Malay children, the Raven's SPM had an internal consistency of .76 and the test-retest reliability after 30 days was .77 (Abd Majid 1994). Since it is a non-verbal test, it does not require any translation. In this study, Raven's SPM was used to screen the respondents.

Currently, the most widely used teacher's rating is the scale for rating behaviour characteristics of superior students (SRBCSS) developed by Renzulli *et al.* in 1971 (Rust and Lose 1980). The SRBCSS has four subtests: learning (8 items), motivation (9 items), creativity (10 items) and leadership

(10 items). Renzulli *et al.* reported that SRBCSS significantly discriminated between gifted and average children. It has a promising stability coefficient ($r = 0.77-0.91$). The construct validity of four subtests was established using factor analysis.

In this study, the English version of SRBCSS was initially translated into Malay by the researcher. It was then given to a translation panel of five academicians in the Faculty of Educational Studies, Universiti Pertanian Malaysia. After receiving separate comments from each member of the panel, the researcher made the necessary changes. The final Malay version of SRBCSS was given to five final-year Bachelor of Education (Teaching of English as a Second Language) students in UPM. They translated each item in the SRBCSS back into English. The 'back translation procedure' was essential to ensure that the content of the Malay version of SRBCSS had not deviated from the original English version.

RESULTS

In this study, data on teacher ratings were analysed according to the total score for SRBCSS for each teacher and the subtest score of SRBCSS of each teacher.

Total Score of SRBCSS

On the basis of the *total score* for each teacher, there were four scores that together provided the total SRBCSS score. The four scores were from the Malay, mathematics, English and class teachers.

The results from a stepwise procedure of multiple regression indicated that ratings from the three subject teachers were significant predictors of intellectual giftedness. The amount of variance shared by these three teachers is small (around 12%) (Table 1).

The best predictor of giftedness was the Malay teacher rating with 10% shared variance. The mathematics teacher and the English teacher only gave an additional shared variance of 1% each to the Malay teacher.

The result from Fisher's linear discriminant function analysis indicated that all four teachers' total ratings of SRBCSS can be used to discriminate between intellectually gifted and non-intellectually gifted. The summary of Wilks' statistics is presented in Table 2. The manner in which the variable is entered is similar to the multiple regression with Malay teachers the first variable to be entered.

Data shown in Table 3 indicate that the four teachers' total rating score using SRBCSS correctly classified 64.69% [(134 + 62)/303]. Nearly 40% of the intellectually gifted were classified as non-intellectually gifted (false negatives). Among those who were classified as intellectually gifted, more than half were non-intellectually gifted (false positives).

Teacher Subtest Score of SRBCSS

Based on the teacher subtest score of SRBCSS, there were 16 measures of teacher rating for every respondent (4 teachers × 4 subtests). Data shown in Table 4 indicate that only five measures were significant predictors of intellectual giftedness: Malay learning, maths motivation, English learning, class creativity and class leadership. The five significant predictors shared 20% of variance with intellectual giftedness, nearly twice the amount of variance of the total score of SRBCSS for the four teachers.

The stepwise procedure of multiple regression of the teacher subtests of SRBCSS indicated that five teacher subtests were significant predictors of intellectual giftedness. However, the Wilks' procedure of

TABLE 1
Predictors of intellectual giftedness among the total score of SRBCSS

Step Variable	R	R ²	Adj.R ²	B	Beta	T	Sig.T
1 Malay	.31	.10	.09	.005	.20	3.06	.0024
2 Maths	.33	.11	.11	.003	.13	3.27	.0240
3 English	.35	.12	.12	.002	.13	.207	.0398

TABLE 2
Discriminant analysis for total score of SRBCSS (N = 303)

Step	Teacher	Wilks' Lambda	Sig
1	Malay	.90	.0001
2	English	.89	.0001
3	Maths	.88	.0001
4	Class	.87	.0000

TABLE 3
Predictive classification results for intellectually and non-intellectually gifted (N = 303)

Variables	Fisher's Linear discrimination Function	
	Non-intellectually Gifted	Intellectually Gifted
Malay	.9328	.1216
English	.9301	.1085
Math	.1663	.1860
Class	.1301	.1195
(Constant)	-27.8636	-30.2125

Classification Results		
Predicted Group Membership		
Group	Non-gifted	Gifted
Non-gifted	134 (66.3%)	68 (33.7%)
Gifted	39 (38.6%)	62 (61.4%)

TABLE 4
Predictors of intellectual giftedness among the subtests of SRBCSS

Step	Variables	R	R ²	Adj.R ²	B	Beta	T	Sig.T
	Teacher-subtest							
1	Malay-learning	.31	.09	.09	.014	.16	2.32	.0212
2	Maths-motivation	.37	.14	.13	.023	.23	4.29	.0000
3	English-learning	.40	.16	.15	.011	.13	2.11	.0360
4	Class-creativity	.42	.18	.17	-.013	-.19	-3.29	.0011
5	Class-leadership	.44	.20	.19	.015	.16	2.41	.0167

discriminant analysis identified eight (8) teacher subtests. The summary of the results is shown in Table 5.

The effectiveness of 5 teacher subtests as the result of multiple regression procedure and 8 teacher subtests from Wilks' discriminant function analysis in classifying intellectual giftedness is shown in Table 6. The difference between using eight teacher subtest

measures and five teacher subtests is that the five teacher subtests failed to identify only one (1) intellectually gifted child. Therefore, five teacher subtests are more feasible than eight teacher subtest measures.

CONCLUSION

Based on the above findings, both procedures resulted in 33% 'false negatives' and 50%

TABLE 5
Discriminant analysis for the subtests of SRBCSS (N=303)

Step	Variable	Wilk's Lambda	Sig
1	Malay-learning	.91	.0001
2	Maths-motivating	.86	.0001
3	English-learning	.84	.0001
4	Class-creativity	.82	.0001
5	Class-leadership	.80	.0001
6	Malay-leadership	.80	.0001
7	English-leadership	.80	.0001
8	Class-motivation	.79	.0001

TABLE 6
Predicted group membership by discriminant function analysis teacher-subtest of SRBCSS

Actual	N	Teacher-Subtest SRBCSS			
		8 Measures Predicted		5 Measures Predicted	
		0	1	0	1
0	202	147 (72.8%)	55 (27.2%)	141 (69.8%)	61 (30.2%)
1	101	35 (34.7%)	66 (65.3%)	34 (33.7%)	67 (66.3%)
% correct		69.3		68.7	

Note: 0 = non-intellectually gifted
1 = intellectually gifted

'false positives'. However, the five teacher-subtests demanded less teacher's time in administering SRBCSS as each subtest had not more than 10 items. On the contrary, the former procedure (total score) required teachers to appraise each student using all 37 items of SRBCSS.

Since both procedures contained a large number of 'false negatives', there must be some reason why teacher rating did not effectively identify gifted children. Awanbor (1989) found that teachers are more likely to use scholastic achievement as an index to identify gifted children. Burt (1955) alleged that teachers' gradings are markedly biased in favour of memory or capacity to learn. Data from a large body of research on 'self-fulfilling prophecy' indicated that teachers' behaviour and attitude are based upon

physical attractiveness, compliance and active participation. Gifted children are, on the other hand, 'precocious' (Keating 1975), with a tendency to exhibit undesirable behaviour to the teachers.

In the Malaysian context, teachers are the most economical personnel to be utilized in identification of intellectual giftedness. Based on the findings of this study, it is essential for the authorities to train teachers to be objective in their evaluations. Even so, one must recognize that there is a great deal of error in the classification of gifted children.

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