Human Figure Drawing Test : Validity in Assessing Intelligence in Children Aged 3-10 Years

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Abstract

Background : Human-figure-drawing abilities are related with cognitive development in children. As cognitive skills progress, drawing abilities also improve in details and sex differentiation. The Goodenough-Harris (G-H) drawing test was developed to score human figure drawing with separate norms for males and females.

Objectives : To evaluate whether the Goodenough-Harris human drawing test is valid to classify intelligence in children aged 3-10 years.

Material and Method : Record files of 528 children aged between 3 -10 years who had attended the Child and Adolescent Unit at Queen Sirikit National Institute of Child Health (Children's Hospital), Bangkok, Thailand from January 1999 to December 2001 were retrospectively reviewed. Inclusion criteria included: 1) performing the human figure drawing test and standard intelligence tests on the same day and 2) diagnoses were addressed.

Results : The ages of the children ranged from 3 $^{10}/_{12}$ years to 10 $^{11}/_{12}$ years with a mean age of 7 $^{9}/_{12}$ years, 49.5 per cent were males and 50.5 per cent were female. The study group was diagnosed as pervasive development disorder 17 per cent, attention deficit hyperactivity disorder 13 per cent, and mental retardation 11.3 per cent. Overall correlation of full scale intellectual quotient (FSIQ) from the standard intelligence test and standard scores on the Goodenough-Harris system was 0.813 ($p < 0.01$). The overall validity of the human figure drawing test in classified correct intellectual level was 60.8 per cent but in children with an intellectual quotient (IQ) less than 70, the correct classification was 69.2 per cent. After stratification by age, it was found that the human figure drawing test had validity in predicting IQ below 70 in 88.7 per cent and 68.8 per cent of children aged < 6 years and aged > 6 years respectively.

Conclusion : The human figure drawing test can be used as an additional measure of assessing intelligence in young children but it should not be substituted for standard tests. The test is not complicated, therefore, trained personnel can use it in combination with other screening tests for cognitive development in children.

Key word : Human Figure Drawing Test, Validity, Intelligence, Children Aged 3-10 Years

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Drawing abilities in children improve with age, and young children prefer to draw things close to them such as people, houses, trees and family pets. About three years of age, children can link circle-shaped scribbles to resemble human heads. At the age about four years, they can draw heads, faces and extremities. The faces become symbols of nurture and the eyes are the first signs followed by the mouths and noses which represent communication through language skills. When children are about four to five years of age, they include trunks and extremities to human drawings[1]. As they become mature, more details and sex differentiation are added to the drawings such as skirts for females and pants for males[2,3].

The Goodenough-Harris (G-H) scoring system in particular was developed to evaluate quantitative aspects of human figure drawing in order to assess developmental maturity. The Goodenough-Harris drawing test was supposed to assess intelligence in children without relying on verbal ability. It was generally administered individually or to a group of children aged 3-15 and consists of draw-a-man, draw-a-woman, and an optional self-drawing. Instruments used in this test include a pencil, eraser, and plain white paper. Instructions are very simple such as "Please make me a drawing of a complete, whole person". The Goodenough-Harris drawing test usually takes about 15 minutes. The test was evaluated on the basis of 73 scoring criteria, with separate norms for males and females. Raw scores for the draw-a-man and draw-a-woman were converted to standardized scores. These standard scores assumed to approximate the intellectual quotient of that individual[4]. Studies on cognitive evaluation of children, adolescents and young adults by means of using three methods of scoring systems including the Goodenough-Harris scoring system, Buck's system and Koppitz's system, found significant correlations of all methods with standard intelligence tests (Wechler intelligence scale for children-revised (WISC-R), Wechler adult intelligence scale (WAIS-R), the Stanford-Binet intelligence test). However, Koppitz's system and the G-H system gave similar results in children aged 5-15, while Buck's system showed better results for adolescents than the G-H system and Buck's system and the G-H system demonstrated underscored results in young adults[5-7].

Scott reviewed articles that determined correlations between the Goodenough-Harris (G-H) man and woman standard scores with major intelligence tests (WISC, WAIS, Stanford-Binet test), it was found that the mean correlation from several studies was 0.56[8]. From this result the correlation seemed to be low, however, it was noticed that wide ranges of intelligence from superior IQ to mentally retarded groups had been treated as a homogeneous

group. By stratificating the data into the appropriate level of IQ scores, it has been found that the drawing scores showed discrepancy for those within the average and above average groups[9,10]. Moreover, the G-H scorings showed better correlation when the IQ ranges were in the below average group[11-13]. It was concluded that the G-H scoring cannot substitute the standard intelligence test but it may be used as a screening tool to detect subnormal intellectual children and adults[13]. Interestingly, a study in the elderly mentioned that human-figure drawing could be used as a screening tool for cognitive impairment in old age[14].

In every day practice, physicians are often faced with screening of children with suspected subnormal intelligence and cannot find out simple and appropriate tests. Recommendations from standard textbooks of pediatrics mention the Goodenough-Harris (G-H) human figure drawing test as a screening measure in preschool and early school age children [15,16]. As proving the validity of the test has never been done in Thailand, this study tried to find out whether the Goodenough-Harris human figure drawing test is valid to classify intelligence in children between 3-10 years.

MATERIAL AND METHOD

Medical records of children aged 3-10 years who were attended the Child and Adolescent Psychiatry Unit at Queen Sirikit National Institute of Child Health (Children's Hospital), Bangkok, Thailand from January 1999 to December 2001 were retrospectively identified. Drawing tests and intelligence tests are part of the routine psychological evaluation of patients in the above mentioned unit. Medical records were included if the human figure drawing test and major intelligence tests (Wechler intelligence scale for children or WISC test and Stanford-Binet intelligence test) had been done on the same day and diagnoses had also been documented. After each file was identified, human pictures were separated and sent for scoring by one of the authors in order to control for inter rater reliability. Both raw scores and standard scores on the the Goodenough-Harris (G-H) scoring system were employed for evaluation of all human figure drawings. Finally, the results from standard scores on Goodenough-Harris scoring (G-H) system and IQ from standard intelligence tests were compared for correlation and validity testing by using Pearson product moment correlations and per cent.

RESULTS

There were 723 children aged between 3-10 years old who had performed intelligence tests during the study period. One hundred and ninety-five patients were excluded, which left 528 children enrolled in the study. The patients' ages ranged from 3 $^{10}/_{12}$ years to 10 $^{11}/_{12}$ years (mean age 7 $^{9}/_{12}$ years), 259 (49.5%) were males and 264 (50.5%) were females. The full scale IQs (FSIQ) of males ranged from 24 to 149 with a mean IQ of 84.55. The FSIQ of females ranged from 28 to 137 with a mean IQ of 87.06. Mean scores of verbal and performance IQs in the male group were 93.5 and 89.87 respectively. Mean scores of verbal and performance IQs in the female group were 95 and 88.29 respectively. Standard scores on the Goodenough-Harris scoring system for males ranged from 50 to 138 with a mean score of 86.89. Standard scores on the Goodenough-Harris scoring system for females ranged from 49 to 125 with a mean score of 86.2. Means and standard deviations of each measure are shown in Table 1.

The diagnoses of patients who had performed the intelligence tests included: Pervasive Development Disorders 17 per cent, Attention Deficit Hyperactivity Disorder 13 per cent, Mental Retardation 11.3 per cent, Convulsive Disorders 11.3 per cent, Psychological Factors Affecting Physical Condition 8.2 per cent, Specific Learning Disability 6.1 per cent, Adjustment Disorder 4 per cent and others.

Pearson product moment correlations were computed between the following variables; full scale IQs from WISC or Stanford-Binet tests, and standard scores on the Goodenough-Harris scoring system. Male and female FSIQ, male and female standard scores on the Goodenough-Harris (G-H) scoring system. Overall correlation of full scale IQs and standard scores on the Goodenough-Harris (G-H) system was 0.813. Although correlations of both male and female standard scores on the G-H scoring system with FSIQ was significant at the level of $p < 0.0.1$, males showed better correlation than females as shown in Table 2.

The validity of Goodenough-Harris standard scores in predicting the accurate intellectual level was performed through the classification hit rate. Overall accuracy rate in predicting intellectual level of both males and females was only 60.8 per cent. Table 3 presents the accuracy of classification for the G-H male drawing scores, Overall male classification hit rate was 64 per cent. The best classification rate was achieved at the lower end of the IQ range, with 73.8

Table 1. Means and standard deviations of each measure.

Variables	Mean	SD
FSIQ from WISC or Stanford-Binet test		
Males	84.55	23.97
Females	87.06	21.83
Verbal IQ from WISC test		
Males	93.5	18.2
Females	88.29	18.97
Performance IQ on WISC test		
Males	89.87	20.16
Females	88.29	18.97
Standard G-H score		
Males	86.89	17.77
Females	86.2	15.35

Table 2. Correlation matrix of full scale IQ on standard intelligence tests *vs* standard scores of G-H whole group, standard scores of G-H male, and standard scores of G-H female.

Variables	Full scale IQ (FSIQ)	Standard scores on G-H	Standard scores on G-H male	Standard scores on G-H female
Full scale IQ (FSIQ)	1.0	0.813*	0.830*	0.798*

* Correlation is significant at the level of $p < 0.01$ level (2-tailed).

Table 3. Accuracy of classification using full scale IQ and male drawing standard scores on G-H scoring system.

FSIQ of WISC or Stanford-Binet tests	Male standard scores of the Goodenough-Harris system							
	< 70	%	70-89	%	90-109	%	> 110	%
< 70 (n = 61)	45	73.8	14	23.0	2	3.3	0	0
70-89 (n = 74)	2	2.7	50	67.6	21	28.5	1	1.4
90-109 (n = 94)	1	1.1	28	29.8	55	58.5	10	10.6
> 110 (n = 30)	0	0	1	3.1	13	43.3	16	53.3

per cent of subjects with an IQ below 70 correctly classified. The hit rate for IQ range between 70-89 was 67.6 per cent, the hit rates for the remaining IQ categories were less than 60 per cent.

The classification hit rates for female standard scores using the G-H scoring system are shown in Table 4. Overall female classification hit rate was 57.5 per cent. The best classification rate was again achieved at the lower end of the IQ range, with 69.2 per cent of children with an IQ less than 70 correctly classified. The hit rate for the IQ range between 70-89 was 64.4 per cent, the hit rates for the remaining IQ categories were poor.

Hit rates of the G-H standard scores in predicting intellectual level were again computed after stratification of the patients into two groups including age less than 6 years and more than 6 years. The age group below 6 years had a hit rate of 88.7 per cent in predicting an IQ below 70, and hit rate of 77.9 per cent in predicting IQ between 70-89. The group older than 6 years of age had an accuracy rate of 68.8 per cent in predicting an IQ below 70, and hit rate of 64.1 per cent in predicting an IQ between 70-89. The classification accuracy rates of children in both age groups were shown in Table 5.

Table 4. Accuracy of classification using full scale IQ and female drawing standard scores on G-H scoring system.

FSIQ of WISC or Stanford-Binet tests	Female standard scores of the Goodenough-Harris system							
	< 70	%	70-89	%	90-109	%	> 110	%
< 70 (n = 52)	36	69.2	16	30.8	0	0	0	0
70-89 (n = 73)	5	7.2	47	64.4	20	27.4	1	1.4
90-109 (n = 107)	3	2.8	37	34.6	62	57.9	5	4.7
> 110 (n = 32)	0	0	1	3.1	24	75	7	21.9

Table 5. Accuracy of classification stratified by age groups (below 6 years and above 6 years).

Age group	FSIQ of WISC or Stanford-Binet tests	Standard scores of the Goodenough-Harris system							
		< 70	%	70-89	%	90-109	%	> 110	%
Below 6 years	< 70 (n = 17)	15	88.2	2	11.8	0	0	0	0
	70-89 (n = 19)	1	5.3	15	78.9	3	15.8	0	0
	90-109 (n = 43)	3	7	19	44.2	16	37.2	5	11.6
	> 110 (n = 14)	0	0	2	14.3	5	35.7	7	50
Above 6 years	< 70 (n = 96)	66	68.8	28	29.2	2	2.1	0	0
	70-89 (n = 108)	6	4.7	82	64.1	38	29.7	2	1.6
	90-109 (n = 158)	1	0.6	46	29.1	101	63.9	10	6.3
	> 110 (n = 48)	0	0	0	0	32	66.7	16	3.3

DISCUSSION

Clinicians have found the Goodenough-Harris human figure drawing test attractive because it is easy, efficient, widely applicable, and apparently unbiased. In addition, children preferred to perform the test since it did not threaten them and during the testing process most of them seemed to be happy and relaxed

Since a time lapse between the standard intelligence test and the human figure drawing test of more than 2 weeks (17) could effect the test results, to control this problem, record files were selected only from children who had performed the intelligence and drawing test on the same day. Other factors which were claimed to effect the test results include: schooling(18), exceptionality status(17), art instruction(17, 19) and sensorimotor and a cognitive perceptual training program for children(20). However, fears, anxiety and self-esteem problems in children may effect the size of the human drawings and increase the anxiety scores but not effect on cognitive scores(21-23).

From the present study, the overall correlation of full scale IQs and standard scores of the Goodenough-Harris standard scores was higher than mentioned by other studies(8,13). In order to explain these results, it must be understood that the present study design was not the same as previous studies by employing human figure drawing tests for young children. Chappel and Steitz illustrated that children's human figure drawing and cognitive abilities correlated well in children age 4 through 6 years(24). Fabry and Bertinetti who studied children aged from 6-0 to 10-10 on the human figure drawing test and the performance scores on the WISC-R test revealed a correlation of 0.69(25). But, a study of children with a mean age of 12 $^{8}/_{12}$ years showed the correlation between FSIQ with male and female standard G-H scores to be 0.48 and 0.49 respectively(13). These results implied that although cognitive development still correlated with human figure drawing during school and adolescent periods, other factors may influence drawing abilities(17-20). Hence, using the G-H scoring system was appropriate during the early childhood period but during the adolescent and young adult periods other scoring systems may be more appropriate than the G-H scoring system(5-7).

The validity of standard G-H scores in classifying correct intellectual level in the present study was 60.8 per cent, which was the same as other studies(11-13). In addition, the validity of this test in classifying the group with an IQ below 70 increased to 73.8 per cent in males and 69.2 per cent in females.

Aikman and colleagues had studied in the group of IQ below 80 and found that validity ranged from 72 per cent in male to 76 per cent in female[13]. However, it was striking that children below 6 years had an 88 per cent hit rate in predicting low intelligence, the result seemed to be different from other studies[12, 13] since most studies did not stratify the age group and performed the human figure drawing test in adolescent and older children. Thus, it indicated that the standard G-H scoring system showed some promise as a screening tool for those with below average intelligence especially in young children.

The majority of the study group was diagnosed as Pervasive Development Disorder followed by Attention Deficit Hyperactivity Disorder, and Mental Retardation. These represented the diagnostic characteristics of preschool and early school aged children visiting the Child and Adolescent Psychiatry Unit during the study period. It was also noted that the majority of children with intelligence below 70 were diagnosed as Pervasive Development Disorder and mental retardation. It may be concluded that the human figure drawing test can be used in evaluating cognitive ability in children with a variety of problems. Previous studies mentioned that the human figure drawing test could be used as a diagnostic aid in children with problems such as visual motor problems, vestibular processing dysfunction, learning disability, and mental retardation[26-28]. The test result correlated well with performance IQ[26]. Interestingly, children with hearing deficit and spina bifida showed no difference in performing the human drawing test from the control group[29,30].

In conclusion, the results of the present study supported the use of the human figure drawing test as an additional measure of assessing intelligence in young children. However, it did not imply that the human figure drawing test could be used as a substitute for standard intelligence tests. Hence, the test process can be done while waiting for physical and mental check-up. In addition, pediatricians and trained personnel may use this human figure drawing test in combination with other measures for monitoring cognitive development in young children.

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REFERENCES

1. Denehy AJ. Communicating with children through drawings. In: Craft JM, Denehy AJ, eds, Nursing intervention for infants and children. Philadelphia: WB Saunders; 1990: 110-26.
2. Bensur BJ, Eliot J. Case developmental model and children's drawings. Percept Mot Skills 1993; 76: 371-5.
3. Bensur BJ, Eliot J, Hegde L. Cognitive correlates of complexity of children's drawings. Percept Mot Skills 1997; 85: 1079-89.
4. Harris D. Goodenoogh-Harris drawing test manual. San Antonio: Harcourt Brace Javanovich; 1991: 239-316.
5. Abell SC, Heiberger AM, Johnson JE. Cognitive evaluations of young adults by means of human figure drawings: An empirical investigation of two methods. J Clin Psychol 1994; 50: 900-5.
6. Abell SC, Von Brieson PD, Watz LS. Intellectual evaluations of children using human figure drawings: An empirical comparison of two methods. J Clin Psychol 1996; 52: 67-74.
7. Abell SC, Horkheimer R, Nguyen SC. Intellectual evaluations of adolescents *via* human figure drawings: An empirical comparison of two methods. J Clin Psychol 1998; 54: 811-5.
8. Scott L. Measuring intelligence with Goodenough-Harris drawing test. Psychol Bull 1981; 89: 483-505.
9. GaytonW, Evans H, Wilson W. Comparative validity of Harris points and quality scale. Percept Mot Skills 1971; 33: 111-2.
10. Reisman J, Yamakoshi T. Can intelligence be estimated from drawing of a man? J School Psychol 1973; 22: 239-44.
11. Ables B. The use of the Draw-A-Man Test with borderline retarded children without pronounced pathology. J Clin Psychol 1971; 27: 262-3.
12. Pihl R, Nimrod G. The reliability and validity of the Draw-A-Person Test in IQ and personality assessment. J Clin Psychol 1976; 32: 470-2.
13. Aikman KG, Belter RW, Finch AJ. Human figure drawings: Validity in assessing intellectual level and academic achievement. J Clin Psychol 1992; 48: 114-20.
14. Ericsson K, Hilleras P, Holmen K, Winblad B. Human figure drawing in the screening of cognitive impairment in old age. J Med Screen 1996; 3: 105-9.
15. Lewis M. Psychiatric assessment of infants, children and adolescents. In: Lewis M, ed. Child and adolescent psychiatry: A comprehensive textbook. Baltimore: Williams & Wilkins; 1996: 440-53.
16. Levine K. Psychological testing. In: Levine DM, Carey BW, Crocker CA, eds. Developmental-behavioral pediatrics. Philadelphia: WB Saunders; 1999: 725-30.
17. Lindsey JD, Frith GH. Effects of exceptionality status and art instruction on Goodenough-Harris standard IQs. Am J Ment Defic 1981; 85: 658-60.
18. Martlew M, Connolly KJ. Human figure drawings by schooled and unschooled children in Papua New Guinea. Child Dev 1996; 67: 2743-62.
19. Feher E, Vandecreek L, Teglasi H. The problem of art quality in the use of human figure drawing tests. J Clin Psychol 1983; 39: 268-75.
20. Culp RE, Packard VN, Humphrey R. Sensori-motor *versus* cognitive-perceptual training effects on the body concept of preschoolers. Am J Occup Ther 1980; 34: 259-62.
21. Sturner RA, Rothbaum F, Visintainer M, Wolfer J. The effects of stress on children's human figure drawings. J Clin Psychol 1980; 36: 324-31.
22. Paine P, Alves E, Tubino P. Size of human figure drawing and Goodenough-Harris scores of pediatric oncology patients: A pilot study. Percept Mot Skills 1985; 60: 911-4.
23. Carroll MK, Ryan Wenger MA. School-age children's fears, anxiety and human figure drawings. J Pediatr Health Care 1999; 13: 24-31.
24. Chappell PA, Steitz JA. Young children's human figure drawings and cognitive development. Percept Mot Skills 1993; 76: 611-7.
25. Fabry JJ, Bertinetti JF. A construct validation study of the Human figure drawing test. Percept Mot Skills 1990; 70: 465-6.
26. Tramill JL, Edward RP, Tramill JK. Comparison of the Goodenough-Harris drawing test and the WISC-R for children experiencing academic difficulties. Percept Mot Skills 1980; 50: 543-6.
27. Ottenbacher K, Abbot C, Haley D, Watson PJ. Human figure drawing ability and vestibular process dysfunction in learning-disabled children. J Clin Psychol 1984; 40: 1084-9.
28. Mati-Zissi H, Zafiropoulou M. Drawing performance in prediction of special learing difficulties of kindergarten children. Percept Mot Skills. 2001; 92: 1154-66.
29. Davis CJ, Hoopes JL. Comparison o House-Tree-Person drawings of young deaf and hearing children. J Pers Assess 1975; 39: 28-33.
30. Evans AL. Does deficient sensorimotor experience affect drawing of human figure? Pediatr Rehabil 1999; 3: 37-9.

แบบทดสอบการวาดภาพคน : ความเที่ยงตรงในการประเมินเชาว์ปัญญาในเด็กอายุ 3–10 ปี

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ความเป็นมา : การวาดภาพคนในเด็กมีความสัมพันธ์กับพัฒนาการด้านเชาว์ปัญญาและความคิด เมื่อเด็กมีความสามารถเพิ่มขึ้นการวาดภาพคนก็จะมีรายละเอียดและการแยกลักษณะทางเพศมากขึ้น Goodenough–Harris เป็นแบบทดสอบการวาดภาพคนเพื่อประเมินเชาว์ปัญญาโดยมีการให้คะแนนแตกต่างกันในเพศชายและเพศหญิง

วัตถุประสงค์ : เพื่อศึกษาว่าแบบทดสอบการวาดภาพคนของ Goodenough–Harris มีความเที่ยงตรงในการทายผลเชาว์ปัญญาในเด็กอายุระหว่าง 3–10 ปีได้เพียงใด

วิธีการศึกษา : ศึกษาจากรายงานผู้ป่วยของแผนกจิตเวชเด็กและวัยรุ่น สถาบันสุขภาพเด็กแห่งชาติมหาราชินีระหว่างมกราคม 2542 ถึงธันวาคม 2544 จำนวน 528 ราย มีเกณฑ์คัดเลือกโดยเด็กต้องทำการตรวจเชาว์ปัญญาโดยวิธีมาตรฐานและทำแบบทดสอบการวาดภาพคนในวันเดียวกัน รวมทั้งมีการวินิจฉัยโรคที่แน่นอน จากนั้นนำภาพคนมาให้คะแนนตามวิธีการของ Goodenough–Harris ทำการวิเคราะห์สหสัมพันธ์ และความแม่นยำในการทายระดับเชาว์ปัญญา

ผลการศึกษา : เด็กที่อยู่ในกลุ่มศึกษามีอายุระหว่าง 3 ปี 10 เดือน ถึง 10 ปี 11 เดือนอายุเฉลี่ย 7 ปี 9 เดือน โดย 49.5% เป็นเพศชาย 50.5% เป็นเพศหญิง กลุ่มศึกษาได้รับการวินิจฉัยว่าเป็นออทิสซึม 17% สมาธิสั้น 13% ปัญญาอ่อน 11.3% ผลของการวิเคราะห์สหสัมพันธ์ระหว่าง ผลที่ได้จากแบบทดสอบการวาดภาพคน กับผลของเชาว์ปัญญาที่ได้จากการใช้แบบทดสอบมาตรฐานเท่ากับ 0.813 ($p < 0.01$) การหาค่าความเที่ยงตรงของแบบทดสอบในการทายระดับเชาว์ปัญญาได้ถูกต้องของกลุ่มศึกษาทั้งหมดเท่ากับ 60.8% ส่วนความเที่ยงตรงของแบบทดสอบในการทายเชาว์ปัญญาเด็กที่มีเชาว์ปัญญาน้อยกว่า 70 มีความเที่ยงตรง 69.2% และเมื่อแบ่งกลุ่มเด็กออกเป็นเด็กอายุน้อยกว่า 6 ปี และมากกว่า 6 ปี พบว่าค่าความเที่ยงตรงในการใช้แบบทดสอบการวาดภาพคนในการทายเชาว์ปัญญาที่ต่ำกว่า 70 เท่ากับ 88.7% และ 68.8% ในเด็กอายุน้อยกว่า 6 ปี และมากกว่า 6 ปีตามลำดับ

สรุป : แบบทดสอบการวาดภาพคนสามารถใช้ร่วมกับแบบทดสอบอื่น ๆ ในการประเมินเชาว์ปัญญาเด็กแต่ไม่สามารถทดแทนแบบทดสอบเชาว์ปัญญามาตรฐานที่มีอยู่แล้ว บุคลากรที่ผ่านการฝึกฝนสามารถใช้แบบทดสอบนี้ในการคัดกรองพัฒนาการด้านความคิดและเชาว์ปัญญาในเด็กได้

คำสำคัญ : แบบทดสอบการวาดภาพคน, ความเที่ยงตรง, เชาว์ปัญญา, เด็กอายุ 3–10 ปี

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