

APLIKASI UJIAN KECERDASAN KEPADA PELAJAR SEKOLAH

(Application of the Intelligence Tests to School Students)

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ABSTRAK

Faktor *G* merupakan ukuran kecerdasan am bagi tahap kognitif individu dalam aspek kehidupan. Kajian mendapati faktor *G* berkait rapat dengan kecemerlangan pelajar dalam akademik. Makalah konsep ini bertujuan menerangkan teori kecerdasan dan aplikasi ujian kecerdasan kepada pelajar sekolah. Penilaian kecerdasan intelek (IQ) melalui penaksiran akademik seperti ujian pencapaian tidak dapat membangunkan individu yang berjaya dalam jasmani, emosi, rohani dan intelek. Ujian kecerdasan merupakan satu kaedah yang sesuai untuk mengukur IQ pelajar. Didapati ujian kecerdasan yang ada tidak hanya mengukur aspek pengetahuan akademik sahaja, malahan juga mengukur faktor kognitif yang perlu dimiliki oleh seseorang individu. Aplikasi ujian kecerdasan sangat berguna untuk membangunkan potensi pembelajaran individu. Walau bagaimanapun, mekanisma untuk memberikan keputusan dalam ujian kecerdasan hendaklah dipiawaikan dan sah supaya dapat ditafsirkan dengan betul dan memberikan keputusan yang adil. Keputusan daripada ujian kecerdasan berguna untuk memberi maklum balas kepada pelajar dan juga mengambil tindakan susulan bagi intervensi dalam meningkatkan pembangunan kognitif pelajar.

Kata kunci: faktor *g*; ujian kecerdasan; kecerdasan intelek; kognitif dan pelajar

ABSTRACT

G factor is a general measure for an individual's cognitive level of intelligence. Research indicates that *G* factor is associated with student's academic excellence. This concept paper aims to explain the theory of intelligence and the application of the intelligence tests to school students. Evaluation of the intelligence quotient (IQ) through the academic assessment such as achievement test will not be able to develop a successful student physically, emotionally, spiritually and intellectually. An intelligence test is a suitable method for measuring student's IQ. Available intelligence tests do not only measure the aspects of knowledge in academic but also the cognitive factors that are needed for an individual. Application of the intelligence test is useful for developing student's learning potentials. However, the mechanisms used to provide the results of the intelligence tests should be standardised and valid in order to make the right interpretations and fair decisions. Result from the intelligence test is useful for giving feedback to student as well as follow-up for the student intervention to enhance student's cognitive development.

Keywords: *G* factor; intelligence test; intelligence quotient; cognitive and student

Rujukan

- Abad F.J., Colom R., Rebollo I. & Escorial S. 2004. Sex differential item functioning in the Raven's Advanced Progressive Matrices: Evidence for bias. *Personality and Individual Differences* **36**: 1459-1470.
- Akta Pendidikan. 1996. *Peraturan-Peraturan Pendidikan (Pendidikan Khas)*. Susunan oleh Lembaga Penyelidikan Undang-Undang. Kuala Lumpur: International Law Books Services.
- Becker K.A. 2003. History of the Stanford-Binet Intelligence Scales: Content and Psychometrics. <http://www.assess.nelson.com/pdf/sb5-asb.pdf>. (22 February 2010)
- Canives G.L. 2008. Orthogonal higher order factor structure of the Stanford-Binet Intelligence Scales – Fifth edition for children and adolescents. *School Psychology Quarterly* **23**(4): 533-541.
- Carroll J.B. 1993. *Human Cognitive Abilities: A Survey of Factor-Analytic Studies*. Cambridge, MA: Cambridge University Press.
- Cattell R.B. 1987. *Intelligence: Its structure, Growth and Action*. Amsterdam: North Holland.

- Chan D.W. 2007. Components of leadership giftedness and multiple intelligences among Chinese gifted student in Hong Kong. *High Ability Studies* **18**(2): 155–172.
- Clark B. 2008. *Growing up Gifted*. 7th Ed. Upper Saddle River, NJ: Prentice Hall.
- Davidson J. & Davidson B. 2004. *Genius Denied: How to Stop Wasting Our Brightest Young Minds*. New York: Simon & Schuster.
- Duckworth A.L. & Seligman M.E.P. 2005. Self-discipline out: Does IQ in predicting academic performance of adolescents. *American Psychological Society* **16**(12): 939-944.
- Feldhusen J.F. 1989. Synthesis of research on gifted youth. *Educational Leadership* **46**: 6-11.
- Fitzgerald S., Gray N.S. & Snowden R.J. 2006. A comparison of WAIS-R and WAIS-III in the lower IQ range: Implications for learning disability diagnosis. *Journal of Applied Research in Intellectual Disabilities* **20**: 323–330.
- Furnham A. 2009. The validity of a new Self-report measure of multiple intelligences. *Curriculum Psychology*. **28**: 225-239.
- Gardner H. 1993. *Multiple Intelligences*. New York: Basic Books.
- Goldbeck L., Daseking M., Hellwig-Brida S., Waldmann H.C. & Petermann F. 2010. Sex differences on the German Wechsler Intelligence Test for Children (WISC-IV). *Journal of Individual Differences*. **31**(1): 22–28.
- Guilford J.P. 1985. The structure-of-intellect model. In: Wolman B.B (Ed.) *Handbook of Intelligence*. (pp. 225-266). New York: John Wiley & Sons.
- Horn J.L. 1994. Theory of fluid and crystallized intelligence. In: Sternberg R.J. (Ed.). *The Encyclopedia of Human Intelligence* **1**: 443–451.
- Horn J.L. 1998. A basis for research on age differences in cognitive capabilities. In: McArdle J.J. & Woodcock R.W. *Human Cognitive Abilities in Theory and Practice*. Chicago: Riverside.
- Jensen A.R. 1984. The black-white difference on the K-ABC: Implication for future tests. *Journal of Special Education* **18**(3): 377-408.
- Kaufman A.S, Flanagan D.P., Alfonso V.C. & Mascolo J.T. 2006. Test Review: Wechsler Intelligence Scale for Children Fourth Edition (WISC-IV). *Journal of Psychoeducational Assessment* **24**: 278-295.
- Keith T.Z., Fine J.G., Taub G.E., Reynolds M.R. & Kranzler J.H. 2006. Higher order, multisample, confirmatory factor analysis of the Wechsler Intelligence Scale for Children-Fourth Edition: What Does It Measure? *School Psychology Review* **35**(1): 108-127.
- Klausmeier K., Mishra S.P. & Maker C.J. 1987. Identification of gifted learners: A national survey of assessment practices and training needs of school psychologists. *Gifted Child Quarterly* **31**(3): 135-137.
- Mackintosh N.J. 1998. *IQ and Human Intelligence*. Oxford, England: Oxford University Press.
- Mayers S.D. & Susan L.C. 2008. WISC-IV and WIAT-II profiles in children with high-functioning autism. *Journal of Autism and Developmental Disorders* **38**(3): 428-439.
- Messick S. 1995. Validity of psychological assessment: Validation of inferences from persons' responses and performances as scientific inquiry into score meaning. *American Psychologist* **50**: 741–749.
- Messick S. 1994. The interplay of evidence and consequences in the validation of the performance assessments. *Educational Researcher* **23**: 13-23.
- Miller M.D., Linn R.L. & Gronlund N.E. 2009. *Measurement and Assessment in Teaching*. 10th Ed. Upper Saddle River, NJ: Pearson Education.
- Neto F., Fatimah R. & Furham A. 2008. Sex Differences in self-estimation of multiple intelligences among Portuguese adolescents. *High Ability Studies* **19**(2): 189-204.
- Nitko A.J. & Brookhart S.M. 2007. *Educational Assessment of Students*. 5th Ed. Upper Saddle River, NJ: Pearson Prentice-Hall.
- Mohd. Ishak N., Abd. Majid R. & Mohd. Yassin S.F. 2009. *PERMATApintar: Pengalaman UKM*. Bangi: Pusat PERMATApintar Negara, Universiti Kebangsaan Malaysia.
- Olatoye R.A. & Oyundoyin J.O. 2007. Intelligence quotient as a predictor of creativity among some Nigerian secondary school students. *Educational Research and Review* **2**(4): 92-95.
- Reynolds C.R., Livingston R.B. & Wilson V. 2010. *Measurement and Assessment in Education*. 2nd Ed. Upper Saddle River, NJ: Pearson Education.
- Richardson K. 2002. What IQ tests test? *Theory & Psychology* **12**(3): 283-314.
- Roid G.H. 2003. *Stanford-Binet Intelligence Scales*. 5th Ed. Itasca, IL: Author.
- Sternberg R.J. & Clinkenbeard P.R. 1995. The triarchic model applied to identifying, teaching and assessing gifted children. *Roeper Review* **17**(4): 255-260.
- Sternberg R.J., Grigorenko E.L. & Bundy D.A. 2001. The predictive value of IQ. *Merrill Palmer Quarterly* **47**(1): 1-41.
- Sternberg R.J. 2006. *Cognitive psychology*. 4th Ed. Belmont, CA: Wadsworth.
- Tennant A. & Pallant J.F. 2007. DIF Matters: A practical approach to test if Differential Item functioning makes a difference. *Rasch Measurement Transactions* **20**: 1082-1084.
- Thorndike R.L. 1994. *G. Intelligence* **19**: 145–155.
- Vernon P.E. 1979. *Intelligence: Heredity and Environment*. San Francisco: W. H. Freeman & Company

Aplikasi ujian kecerdasan kepada pelajar sekolah

- Watkins M.W. 2006. Orthogonal higher order structure of the Wechsler Intelligence Scale for Children – Fourth Edition. *Psychological Assessment* **18**(1): 123-125.
- Wechsler D. 2003. *Wechsler Intelligence Scale for Children—Fourth Edition, Technical and Interpretive Manual*. San Antonio, TX: Harcourt Assessment, Inc.
- Whitaker S. & Wood C. 2007. The distribution of scaled scores and possible floor effects on the WISC-III and WAIS-III. *Journal of Applied Research in Intellectual Disabilities* **21**: 136–141.

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