Please answer each question pertaining to psychology each question a minimum of 155 words. Provide references APA format. Due Wednesday February 1st

* + 1. How are intelligence and achievement tests used together?  Does using these tests together improve or impact the reliability or validity of either?  In what way?

* + *2. Ch 9: How is intelligence defined and measured? Do you think its valid and reliable? Give reference to* why or why not

3. Ch: 11 How are assessments used in the educational environment?  What are your feelings on this?  Are there better ways to utilize testing in this environment?

4. CH : 11 In what ways are intelligence and achievement and the ways in which we measure them similar and different?

5. Intelligence and achievement: Just how correlated are they?

Artilcle reference by: Jack A. Naglieri Brienan T. Bornstein, George Mason University

6. Intelligence and educational achievement Summarize the attached article and give your input on what you think of intelligence test and educational see attachment

<http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171>

Intelligence and educational achievement

* [Ian J. Deary](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171)[a](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#aff1), , ,
* [Steve Strand](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171)[b](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#aff2),
* [Pauline Smith](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171)[c](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#aff3),
* [Cres Fernandes](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171)[c](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#aff3)
* a Department of Psychology, University of Edinburgh, 7 George Square, Edinburgh EH8 9JZ, Scotland, UK
* b Centre for Educational Development, Appraisal and Research, University of Warwick, UK
* c NFER-Nelson, London, UK

Received 26 October 2005, Revised 3 February 2006, Accepted 17 February 2006, Available online 6 March 2006

This 5-year prospective longitudinal study of 70,000 + English children examined the association between psychometric intelligence at age 11 years and educational achievement in national examinations in 25 academic subjects at age 16. The correlation between a latent intelligence trait (Spearman's *g* from CAT2E) and a latent trait of educational achievement (GCSE scores) was 0.81. General intelligence contributed to success on all 25 subjects. Variance accounted for ranged from 58.6% in Mathematics and 48% in English to 18.1% in Art and Design. Girls showed no advantage in *g*, but performed significantly better on all subjects except Physics. This was not due to their better verbal ability. At age 16, obtaining five or more GCSEs at grades A⁎–C is an important criterion. 61% of girls and 50% of boys achieved this. For those at the mean level of *g* at age 11, 58% achieved this; a standard deviation increase or decrease in *g* altered the values to 91% and 16%, respectively.

Ability testing is one of the most widespread yet most controversial exports from academic psychology to the real world, intended to provide an objective measure of the individual differences in cognitive abilities that undoubtedly exist within society. Firm evidence that psychometric test scores accurately predict real-world success would have considerable import at the practical and the theoretical levels. It would justify the use of such tests as educational and occupational selection tools and as dependent variables in studies of possible genetic and neurophysiological correlates of cognitive ability differences. Predicting individual differences in educational outcomes was the raison d’être for the first broad test of cognitive ability ([Binet, 1905](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171%22%20%5Cl%20%22bib6) and [Zenderland, 1998](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171%22%20%5Cl%20%22bib32)). The discovery of general intelligence involved, in part, using individual differences in school examination scores ([Spearman, 1904](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#bib25)). Alongside occupational outcomes ([Schmidt & Hunter, 1998](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#bib23)), educational outcomes are the major target for the predictive validity of cognitive ability tests.

What, then, is the association between cognitive ability and educational achievement? There is broad agreement that there is a moderate to strong correlation between the two. [Jencks et al.'s (1979, p. 102)](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#bib12) detailed account of eight samples from six longitudinal studies reported correlations ranging from 0.40 to 0.63 between cognitive test scores and amount of education obtained. More recent overviews are provided by various authors and reach similar conclusions ([Bartels et al., 2002b](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#bib4), [Brody, 1992](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#bib7), [Jensen, 1998](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#bib13), [Neisser et al., 1996](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#bib15) and [Sternberg et al., 2001](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#bib26)). For example, [Mackintosh's (1998)](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#bib14) survey reckoned that there is a correlation between 0.4 and 0.7 between IQ scores and school performance grades. More specifically for the present study, Mackintosh stated that, “in Britain, the correlation between 11-year-old IQ scores and later educational attainment, including performance on school examinations at age 16, is about 0.5”.

The present study will provide a better estimate of the true association between intelligence and education by having multiple cognitive tests as predictors and multiple educational outcomes, applied to a massive representative sample. This echoes [Spearman's (1904)](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#bib25) original examination of the correlation between the latent trait from several school examination results and the latent trait from discrimination tests. For example, using just two ability tests and scores from four school examination areas (languages, science, maths–physics, and humanities), there was a correlation of 0.53 between ability and education latent traits ([Rinderman & Neubauer, 2004](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171%22%20%5Cl%20%22bib20)).

Another major issue addressed by the current study is the gender gap in educational outcomes. Boys perform less well in school assessments than girls, despite similar scores on cognitive tests (e.g. [Fergusson & Horwood, 1997](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#bib11)). The similarity of boys and girls on cognitive test scores at age 11 is quite well established. In studies involving an entire Scottish population ([Deary, Thorpe, Wilson, Starr, & Whalley, 2003](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171%22%20%5Cl%20%22bib9)), or massive representative samples from the United Kingdom ([Strand, Deary, & Smith, in press](http://www.sciencedirect.com.contentproxy.phoenix.edu/science/article/pii/S0160289606000171#bib30)), boys and girls at 11 years of age show no appreciable differences in mean general cognitive ability. However, girls score slightly higher on verbal ability and boys have a slightly larger standard deviation on general and specific ability scores. Here, we aim to determine whether the sex difference in verbal ability (after accounting for *g*) explains any of the sex difference in school assessment performances.

After 100 years of studying the cognitive ability–education association, there is still a need for a definitive, prospective study, one which assesses initial cognitive ability and later educational attainment with comprehensive assessments. Here, we report such a study, using a large, representative, 5-year prospective examination of over 70,000 children in England. The present study asks: (1) what is the association between general cognitive ability and overall educational attainment in 25 different courses?; (2) what is the association between a latent cognitive ability trait (general intelligence or *g*) and a latent educational outcome trait?; (3) what is the effect of sex on examination performance, and is it accounted for by general cognitive and/or verbal abilities?; (4) in epidemiological terms, what is the effect size of cognitive ability on educational