

How schools can identify the next Einstein or Newton

New Cognitive Abilities Test helps 'Intellectual Cinderellas' reach their STEM potential

17 September 2012 – GL Assessment has today published a new edition of the Cognitive Abilities Test (CAT), the UK's most popular test of reasoning abilities for children aged seven – 16 years.

The test, which is used by 50% of UK secondary schools to determine a student's potential exam results and learning strengths and weaknesses, now contains a greater emphasis on uncovering spatial learners.

These learners, who often flourish in STEM (Science, Technology, Engineering and Maths) subjects, are often side-lined in school and pushed towards more manual subjects and professions as their potential remains unidentified.

Pauline Smith, senior psychometric consultant and developer of the CAT4 tests at GL Assessment, said: "Historically educators have tended to define intelligence in their own image, that of the verbally-biased children who work well on writing and language based tasks.

"In reality, much intellectual achievement has sprung from the minds of the spatially-biased, those like Einstein or Newton, who think first in images and only afterwards in words.

"By including a clear measure of spatial ability in CAT4, the potential of children can be identified early and acted upon.

"We need to identify and nurture our scientists, technicians, designers and engineers just as much as our writers, managers, historians and teachers. The education system cannot afford to ignore these intellectual Cinderellas any longer."

Established over 30 years ago, CAT is currently used by schools to identify students' strengths, weaknesses and learning preferences through a series of verbal, non-verbal and quantitative tasks.

The new edition's spatial reasoning tests have been developed based on the latest cognitive research that has found that students with high spatial ability are more likely to succeed in STEM subjects.

Spatial thinkers may find it more difficult to learn during their school careers, particularly as teaching, even in STEM subjects, has a strong verbal bias. Research has found that developing children's spatial thinking at an early age can increase their achievement in STEM subjects.

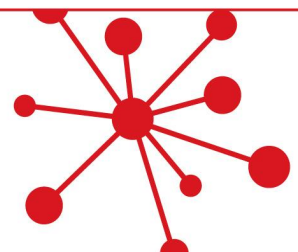
Sue Thompson, Senior Publisher of CAT4, GL Assessment, said: "In July, the Lords Science and Technology Committee called for immediate action to ensure enough young people study STEM subjects, recognising that high levels of understanding of these subjects – particularly in Maths – is of increasing importance to employers.

"Identifying and recognising pupils with high spatial ability is therefore not only important for individual pupils but also for the economy; a workforce educated to a high level in the STEM subjects is key to economic success."

For further information, please contact Danielle Morgan:

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“The additional features of CAT4 will help to identify students who have the potential to pursue careers where spatial skills are needed, as well as how to support their learning in the classroom – and beyond.

“After all, understanding how an individual learns best can only help students and their teachers make learning and teaching more effective.”

Interesting facts and figures

During the research and standardisation of CAT4, an interesting insight was uncovered into the gender differences between verbal and spatial thinkers. Data from over 24,000 UK students highlighted that girls are often more biased towards verbal rather than spatial thinking. Of the 1.5% of students nationally with an extreme bias towards spatial thinking three quarters are boys.

Key findings from the CAT4 standardisation include:

- 19% of girls in primary schools have a verbal bias (bias defined as mild, moderate and extreme) compared to 13% of boys. In contrast, 19% of boys in primary schools have a spatial bias compared with 13% of girls.
- In secondary schools, 20% of girls have a verbal bias compared to 15% of boys.
- Overall, 2.3% of boys aged seven – 16 years show an extreme bias towards spatial thinking across all school years, compared with only 0.8% of girls. The bias is less differentiated by gender for those with an extreme bias to verbal thinking, with 1.8% of females and 1.3% of males being this category.

Sue Thompson explains: “The small gap between boys and girls in terms of extreme verbal profiles probably reflects the verbal-base for much of learning. However, there are some students who show high ability for certain subjects and careers who are simply not being identified at the moment.

“We hope that CAT4 will provide better evidence and more information for those individuals to make informed decisions about their career path.”

What else is new in CAT4?

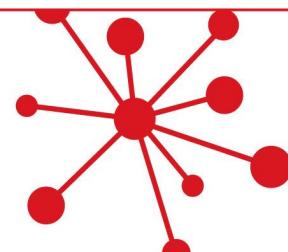
- CAT4 can also be used to inform appropriate target-setting, with indicators of attainment provided at Key Stage 2, Key Stage 3 and Key Stage 4. GCSE indicators are available for 30 subjects as are AS/A Level indicators for 11 subjects and Scottish Standard/Intermediate Grade indicators for 26 subjects. The higher levels of CAT4 can also be used to help inform post-14 pathways.
- There has been a complete redesign of the suite of reports in CAT4. Schools can now select from a range of easy to understand reports which appear in a range of different formats, from PowerPoint presentations for school leadership teams and governing bodies to easy-to-understand formats for parents and students. These explain what the data means and how pupils can be supported in their learning, both at home and at school.
- For international schools, IGCSE indicators will be available from spring 2013.

The importance of cognitive abilities tests was recognised in Lord Bew’s Review of Key Stage 2 testing, assessment and accountability, which highlighted the value schools place on triangulating Government tests with assessments such as CAT.

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CAT4 is available for children aged seven – 16 years. The tests are available in both paper and digital format. For more information, please visit: www.gl-assessment.co.uk/cat4

– ENDS –

Notes to Editors

- CAT4 was standardised on 24,708 Primary and Secondary pupils in Autumn 2011.
- The House of Lords Science and Technology Committee report on STEM subjects can be seen at: <http://www.parliament.uk/business/committees/committees-a-z/lords-select/science-and-technology-committee/news/stem-report-published/>
- Lord Bew's Review of Key Stage 2 testing, assessment and accountability can be seen at: <http://www.education.gov.uk/ks2review>

About GL Assessment

GL Assessment is a leading provider of integrated assessments for children's education, mental health and wellbeing. Our rigorous and high quality assessments have been used by education, health and psychology professionals for three decades. Today, we lead literacy, numeracy and ability testing in UK schools and have delivered 4 million online tests to children. GL Assessment is a division of the GL Education Group.

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