The Advantages of Using the Stanford-Binet Version 5 When Assessing Gifted Individuals

By Fiona Smith

Introduction: the special assessment needs of gifted children

Few experiences are more fascinating than testing a gifted child. From the first moments of meeting the child, a picture of that child's pattern of abilities and, perhaps, relative weakness, is becoming apparent. Amidst the enjoyment of getting to know them, the pieces of a puzzle are being put into place and the final puzzle seems always to be unique from all the others that I have watched coalesce.
(Gilman, 2003).

Like all other students, gifted students need academic challenges matched to their level of intellectual ability. Unlike other students, gifted students may not be given these challenges until the extent of this ability is determined through a combination of above-level achievement testing and independent psychometric testing. Ascertaining the pattern of the child's cognitive strengths and relative weaknesses will help teacher's understand possible learning preferences and provide information as to the degree of challenge to offer in different key learning areas.

Psychologists with years of experience assessing gifted children and postgraduate qualifications in gifted education learn over time that there are ‘tricks of the trade’ in testing (Robinson, 2002). These 'tricks of the trade' include the flexible use of entry level, an emphasis on building rapport, gentle coaxing and a quiet refusal to accept a shrug for an answer, time outs for chat, movement, snacks and laughter and the general attitude of humility, understanding that the child may be considerably more able than the examiner!

Robinson (2002) points out that the examiner should also be prepared to see substantial discrepancies among subtests and domains as a ‘normal’ aspect of giftedness. She comments that psychologists should be prepared for special situations not usually encountered with non-gifted students. Students who are used to knowing the answers can be fragile and threatened in the face of challenges, choosing not to risk wrong answers and thus missing out on points. Perfectionistic and meticulous students may be reflective and slow to answer, compromising their responses on timed items and tasks requiring speed.

In summary, examining psychologists need to be prepared to deal with the intense, the sensitive, the distractible, the anxious, the persistent and the perfectionist - the many varied faces of the gifted. The rapport built with each student presenting for assessment is paramount. Gaining trust and respect can make or break the assessment, greatly influencing the scores achieved on the test.

Structure and content of the SB5

The Fifth Edition was normed on a representative sample of 4800 citizens of the US aged 2 to 85+ years. The sample was matched to the national percentages of age, sex, ethnicity, geographic region and socio-economic levels. Composite scores including the Full Scale IQ, Nonverbal IQ, Verbal IQ and Abbreviated IQ have high reliabilities (above .95).

The Five Factors

The term ‘factor’ comes from the research technique factor analysis, which identifies the degree to which certain variables increase or decrease together. Factor analysis of the SB5 suggests that it does measure the five factors it was designed to measure. The factors each reflect a different learning style in the sense that an

individual with a relative strength in one factor may prefer to learn in ways that emphasise the ability assessed through that factor (Roid, 2002a). The five factors include those predictive of school achievement and those generally recognised by experts in giftedness as key elements of higher-order thinking and general reasoning ability (Benbow & Lubinski, 1996).

Fluid Reasoning (FR)
A key feature of the fluid reasoning tasks is the solving of novel problems. The Nonverbal Matrices tasks measure inductive reasoning of matrix analogy problems, using symbolic and visual content. The Verbal Absurdities and Analogies tasks measure inductive reasoning with verbally absurd statements and verbal analogies (inductive reasoning involves the ability to inspect a set of materials and identify the common characteristic, rule, concept, process or trend underlying the material).

Quantitative Reasoning (QR)
Items were designed to tap as many dimensions of mathematical thinking as possible (number concepts, estimation, problem solving and measurement). Nonverbal tasks measure the ability to apply logical thinking and mathematical knowledge to the solution of pictorially presented quantitative problems. For younger children the subtest measures basic recognition of numbers, addition and estimation. For older children the subtest measures the identification of figural and numerical series, use of linear transformations, algebraic principles, and the use of systems of equations to solve quantitative problems presented in illustrations.
The Verbal tasks measure mathematical conceptualisation, identification of mathematical relationships and logical reasoning in the solution of verbally presented quantitative problems. Tasks range from those requiring fundamental quantitative concepts such as number recognition and counting, addition and estimation to those requiring mathematical reasoning, multiplication skills and advanced logical and mathematical analysis.

Knowledge (KN)
Nonverbal tasks measure the acquisition of general information and the oral production of explanations of absurdities occurring in nature, among people, and in social situations. Older children must use their fund of general information and language development to explain the absurdity or the location and nature of the missing part. Verbal tasks measure lexical knowledge and language development as reflected in vocabulary acquisition and mastery.

Visual-Spatial Processing (VS)
Nonverbal tasks measure various components of visualisation, spatial reasoning and closure speed in assembling puzzle-like forms, assessing the ability to construct the whole from its parts. Verbal tasks measure the understanding of verbal spatial concepts such as ‘inside’ or ‘behind’ and require language skills in responding to maps and illustrations. Verbal descriptions of spatial orientations and directions are required.

Working Memory (WM)
Recent research has shown that Working Memory is strongly related to reading comprehension, arithmetic problem solving and vocabulary acquisition. Working Memory is the process of temporarily storing and manipulating information in short-term memory.

The Domains

Full Scale IQ (FSIQ)
The FSIQ measures the general ability to reason, solve problems, and adapt to the cognitive demands of the environment. It reflects five major facets of intelligence, including reasoning, stored information, memory, visualisation, and the ability to solve novel problems. The FSIQ is usually an effective predictor of long-term educational attainment, school-based achievement and vocational advancement. However, it measures more

than knowledge acquired from schooling.

Nonverbal IQ (NVIQ)
The NVIQ measures the general ability to reason, solve problems, visualise and recall information presented in pictorial, figural and symbolic form as opposed to information presented in the form of words and sentences (printed and spoken). Skills in solving abstract, picture-oriented problems; solving quantitative problems shown in picture form; assembling designs and recalling tapping sequences, are examined.

Verbal IQ (VIQ)
The VIQ measures the general ability to reason, solve problems, visualise and recall important information presented in words and sentences (printed and spoken). It reflects the child's ability to express verbal responses clearly, present rationale for response choices, create stories and explain spatial directions.

Conclusion and Reflections
Gifted children are an ill-served group of special needs students. Few psychologists have had training in addressing their needs. (Robinson, 2002).

Robinson (2002) points out the joys of working with gifted children who often love and even crave adult company and are energised by unusual intellectual challenge.

These are children who usually need few reminders to keep focused and catch on easily to instructions, who enjoy the subtle jokes built into the tests and give creative, often, divergent answers that show their ability to make connections between ideas, who often have a sophisticated sense of humour and love nothing more than going off on tangents, diverting attention away from the task to some wonderful idea, piece of information or flight of fancy.

There is a special joy in watching a shutdown, depressed adolescent who hates school and loathes being told what to do by adults he does not respect, sit back in the chair and slowly metamorphoses into that eager preschooler, that blossoming, creative, curious individual who wanted to learn, who couldn't wait to get to school to begin!

Bobbie Gilman comments that gifted children will respond best to testers who are experienced and who celebrate their intensity and sensitivity, who understand their response style and who know when to speed up for those who think quickly and when to slow down for the reflective ponderer. She sums it up succinctly, ‘I have seen experienced testers of average children test their first exceptionally gifted child and make mistakes due to lack of experience with this population. I have observed a tester, upon hearing an initial answer, rushing to administer the next question, and ‘training in’ a short-answer response style, which lowers such a child's score (Gilman, 2003).

There are many gifted children who present challenges in testing and testers need to develop strategies to meet varying situations and to remain flexible for new situations. Developing the strategies, understanding the tools, selecting what will best measure the abilities of the specific gifted child on the day - this is the journey. The skills can only be attained along the way.

Use of the SB5 with gifted students - what sets it apart from other IQ tests

The SB5 offers a number of advantages for assessing gifted children and adolescents:

* The advisory panel for the SB5 included experts in the field of gifted education who helped design, test and eliminate or retain subtests. These experts were influential in having subtests incorporated that had sufficient

ceiling to be truly challenging.

*It has a *Quantitative Reasoning* factor that gives significant information about the verbal and nonverbal quantitative reasoning ability and mathematical strengths and weaknesses of the examinee.

* It is appealing and engaging and the children particularly enjoy the interactive and kinaesthetic nature of the *Form Patterns* and *Block Tapping* tasks

* The *Visual-Spatial Processing* factor gives an excellent profile of the strengths and weaknesses in both verbal and nonverbal elements of visual-spatial reasoning (ability to understand and respond orally to questions about direction and spatial orientation as well as visual discrimination, visual memory and visualisation skills). Gilman (2003), believes that the SB5 has one of the best visual-spatial reasoning sections seen in any instrument anywhere.

*The SB5 publishers openly state that practitioners and clinicians must make their own judgements about interpretation and are willing to accept studies that trial the experimental Extended IQ, the Gifted Composite Score and the Age Equivalent Scores - they have the best interests of the gifted population in mind and are still making adjustments and publishing *Service Bulletins* that address the needs of this population.

* Gale Roid, the test's author, has shown flexibility in considering alternate ways to score the test when young children perform at a level far above age expectations and has condoned using portions of it for gifted identification (E.g. omitting the Working Memory portion in a special Gifted Composite Score).

* The SB5 has continued the Binet tradition of being largely untimed and allows accommodations include flexibility with the few timed items that remain.

* Experts in gifted education are testing and tabulating SB5 results and updated information will become available as results become known. These experts are recommending some SBLM (Stanford Binet Form LM) /SB5 combination tests where children appear to have exceptional verbal and spatial/mathematical strengths.

* Andrew Carson, (2004) PhD, Senior Project Director at The Riverside Publishing Company, has suggested to Riverside that they develop a new version of the Form L-M. He comments that, ‘In the meantime, it will be the clinician highly experienced in its use that will be discovering ways to enhance SB5 assessment through its joint administration.’

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