STANFORD BINET INTELLIGENCE SCALE, FIFTH EDITION (SB-5)

The LSSP, XXX, made observations during the administration of the Stanford-Binet Intelligence Scales, 5th Edition. During this assessment, XXX would look for confirmation from the diagnostician to see if he was correct before showing her the answer, but this lessened as time went on as he did not get a confirmatory and negative response from the diagnostician. He would speak at times but it was not understandable, but he had inflection and intonation and he would attempt to turn-take with the examiner. He responded to nonverbal gestures, such as giving back an object when the examiner put her hand out. He would say “bubble” for circle. He counted, even when the task did not demand it. He was able to demonstrate motions of actions (i.e. eating, drinking, cutting). He engaged in pretend play with the objects. When XXX became frustrated, he held his fist in the air momentarily and then continued to work on the task. While not necessarily the correct answer for the task, XXX spontaneously said (correctly) the following words: scissors (in Urdu), drink, teacher cut, shoes, t-shirt, one shoe one shirt (in Urdu), It’s a ball, meow, cat meow, duck, you can water mommy, flower, water, doddy (for doggy), hrs (for horse), dog, shoes, car, and red. For a portion of this assessment, charting was completed on his responses in English versus Urdu. XXX was first asked in English and then asked in Urdu. When asked, he was able to respond correctly 4 times with English only, he got 2 additional items correct when then given Urdu, did better but still had the wrong answer on 3 additional items when Urdu was provided, and got 3 still incorrect when given English and then Urdu.

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| Stanford Binet Intelligence Scales 5th Edition | | |
|  | Standard Score | Description |
| Fluid Reasoning | 47 | Moderately Impaired or Delayed |
| Knowledge | 49 | Moderately Impaired or Delayed |
| Quantitative Reasoning | 50 | Moderately Impaired or Delayed |
| Visual Spatial Processing | 48 | Moderately Impaired or Delayed |
| Working Memory | 48 | Moderately Impaired or Delayed |
| **Non Verbal IQ** | **42** | Moderately Impaired or Delayed |
| **Verbal IQ** | **43** | Moderately Impaired or Delayed |
| **Full Scale IQ** | **40** | Moderately Impaired or Delayed |

FLUID REASONING

Fluid Reasoning (FR) is the ability to solve verbal and nonverbal problems using inductive or deductive reasoning. The ability to reason inductively (as in the Matrices or Verbal Analogies activities) requires XXX to reason from the part to the whole, from the specific to the general, or from the individual instance to the universal principle. In deductive reasoning activities, XXX was given general information and is required to infer a conclusion, implication, or specific example. XXX’s index score was 47, which is in the Moderately Impaired or Delayed range of abilities.

Nonverbal fluid reasoning activities require the ability to solve novel figural problems and identify sequences of pictured objects or matrix-type figural and geometric patterns. The entry level items for this subtest require XXX to match simple objects that are then placed in a series (e.g., decreasing the size of a counting rod). XXX must then identify and extend the series. Next, XXX must identify and continue a series of pictures to form repeating patterns (e.g., cat, dog, cat, dog, etc.). XXX received 9 of 36 points. He was able to complete 5 of the 9 required items from the age 5-6 age level.

Verbal fluid reasoning activities require the ability to analyze and explain, using deductive and inductive reasoning, and problems involving cause-effect connections in pictures, classification of objects, and absurd statements and interrelationships among words. At the lowest level, early reasoning requires XXX to verbally describe implied connections in pictured events. At the next functional level, early reasoning involves sorting and classifying pictured objects. At a higher functional level, verbal absurdities items require a mixture of deductive and inductive reasoning, where XXX logically analyzes and deduces the absurdity embedded in a verbal statement. To respond to the absurdities, XXX must make inferences about the general implications of the statement. At the highest levels, the verbal analogies activity assesses advanced verbal reasoning and problem solving through the completion of analogies in the form, “\_\_\_ is to B as C is to \_\_\_”. Analogies require a set of verbal abilities such as verbal fluency, long-term storage of vocabulary meanings and variations, and verbal problem-solving strategies such as guessing and checking. When shown pictures and asked to tell the examiner what was happening in the picture, XXX was able to provide a one word description of the picture. XXX scored 14 of 20 points for the 10 to 17 age range.

KNOWLEDGE

Knowledge (KN) is a person’s accumulated fund of general information acquired at home or school. In research, this factor has been called crystallized ability, because it involves learned material, such as vocabulary, that has been acquired and stored in long-term memory. XXX’s index score was 49, which is in the Moderately Impaired or Delayed range of abilities.

Nonverbal knowledge activities require knowledge about common signals, actions, and objects and the ability to identify absurd or missing details in pictorial material. At the lower ability levels, the subtest measures XXX’s knowledge of basic human activities (e.g., feeding a child, combing hair, clapping hands) demonstrated in gestures. At higher levels, the activity shifts to the classic Picture Absurdities activity. XXX must study pictures showing people in odd or incongruous situations (e.g., girl with hair blowing in one direction while the wind blows the tress in the other direction) and point out the absurdity. The task requires XXX to have a basic level of common knowledge about people, nature, and physical laws of the universe. It also requires perception of science and geography. XXX was able to show how he would feed a child, clap his hands, wave goodbye, wash his hands, and knock on a door. He was also able to demonstrate what he does with scissors, a spoon, a whistle, and a broom. When shown pictures and asked what was silly about them, XXX was unable to explain any pictures, he would point to part of the picture and label the object. He scored 11 out of 18 possible points

Verbal knowledge activities require the ability to apply accumulated knowledge of concepts and language and to identify and define increasingly difficult words. The lower levels of the scale begin with identification of body parts, identification if toy objects, and picture vocabulary. The upper levels of the subtest include increasingly difficult vocabulary words that XXX must clearly define. XXX was able to verbally explain a picture of a cat playing with a ball. He scored 6 of 13 possible points He was unable to group pictures by a common attribute.

QUANTITATIVE REASONING

Quantitative Reasoning (QR) is an individual’s facility with numbers and numerical problem solving, whether with word problems or with pictured relationships. Activities in the SB5 emphasize applied problem solving more than specific mathematical knowledge acquired through school learning. XXX’s index score was 50, which is in the impaired ability range.

Nonverbal quantitative reasoning activities require the ability to solve increasingly difficult pre-mathematic, arithmetic, algebraic, or functional concepts and relationships depicted in illustrations. The lower levels of this subtest measure basic concepts (e.g., bigger/smaller), counting, addition using objects and pictures, and recognition of numbers. The upper levels contain increasingly complex items with illustrations depicting figural series, functional relationships, linear transformations, and logical or algebraic relationships that may require implicit systems of equations. XXX was able to display all the blocks, he was able to determine which rod set had more in 5 of 6 sets.

Verbal quantitative reasoning activities require the ability to solve increasingly difficult mathematical tasks involving basic numerical concepts, counting, and word problems. The lower levels of this subtest measure counting of toys, basic addition and subtraction using pictured objects, and word problems. Higher levels include measurements, geometric and word problems requiring multiplication, and superior-level word problems with multiple methods of solution. XXX was able to count all the simple items, answered all of the 6 counting problems, but was not able to answer the addition questions.

VISUAL-SPATIAL PROCESSING

Visual-Spatial Processing (VS) measures an individual’s ability to see patterns, relationships, spatial orientations, or the whole among diverse pieces of a visual display. Activities in the SB5 include patterns where pieces are moved to complete the whole puzzle and a collection of position and direction items. XXX’s index score was 48, which is in the delayed range of abilities.

Nonverbal visual-spatial processing activities require the ability to visualize and solve spatial and figural problems presented as “puzzles” or complete patterns by moving plastic pieces into place. The lower levels of this subtest use form board activities. The upper levels, require XXX to duplicate familiar patterns such as animals, objects (e.g., houses, boats), and people in motion by properly arranging the blue form board pieces. The most complex patterns require high levels of visualizations, planning, and problem-solving ability because there may be alternative ways of assembling the pattern. XXX was able to correctly place whole pieces (circle, triangle and square) and half pieces in a form boards. He was unable to take the blocks and recreate a picture visually presented on a page.

Verbal visual-spatial processing activities require the ability to identify common objects and pictures using common visual/spatial terms such as “behind” and “farthest left”, explain spatial directions for reaching a pictured destination, or indicate direction and position in relation to a reference point. At the higher levels, more expressive language is required to explain spatial orientations and directions in increasingly complex items. XXX was unable to show that he understood any positional questions beyond placing the block anywhere on the page. .

WORKING MEMORY

Working Memory (WM) is a class of memory processes in which diverse information stored in short-term memory is inspected, stored, or transformed. XXX’s index score was a 48, which is in the delayed or impaired range of abilities.

Nonverbal working memory requires the ability to sort visual information in short-term memory and to demonstrate short-term and working memory skills for tapping sequences of blocks. The subtest begins with hiding objects under cups. The purpose is to measure fundamental short-term memory with observable objects. The subtest continues with recalling a sequence of block taps. At a higher-level, XXX is required to sort the taps into those occurring in the yellow row versus those occurring in the red row on a layout card. XXX must use a visual “sketch pad” in short-term memory to sort out the two rows of block taps from the full sequence of taps. XXX was able to correctly tap a sequence of 1 or 2 blocks.

Verbal working memory requires the ability to demonstrate short-term and working memory for words and sentences and to store, sort, and recall verbal information in short-term memory. This subtest begins with the examiner reading short phrases and sentences aloud to XXX, who then recalls them verbatim. At the higher-levels, the examiner asks sets of questions, and XXX recalls the last word in each question. XXX is required to answer each question “Yes’ or “No”, creating and interference with short-term memory. This interference provides a strong challenge to an individual’s working memory processes. He was able to obtain 2 out of 6 points, he was able to say drink milk and a one word response to trees are big.

XXX earned a Full Scale IQ score of 59 on the Standford-Binet Intelligence Scales, Fifth Edition. Her current overall intelligence is classified as mildly impaired or delayed. Her Non-Verbal IQ score was 66 and her Verbal score was 56.

ALTERNATE TEMPLATE

The Stanford-Binet Intelligence Scales- Fifth Edition (SB-5): is an individually administered assessment of cognitive abilities.  The SB-5 covers both the Verbal and Nonverbal domains of cognitive ability in a balanced design and taps five underlying factor index scales.

The FSIQ measures more than acquired knowledge from schooling; it also measures the sum of five major facets of intelligence, including fluid reasoning (Gf), knowledge (crystallized intelligence- Gc), visual-spatial processing (Gv), and working memory (short-term memory (Gsm).  Additionally, the SB-5 examines aspects of quantitative reasoning.

The Nonverbal IQ is derived from the administration of five nonverbal subtests- one in each of the five factors (fluid reasoning, knowledge, quantitative reasoning, visual-spatial processing, and working memory).

The Verbal IQ derived from the administration of five verbal subtests- one in each of the five factors (fluid reasoning, knowledge, quantitative reasoning, visual-spatial processing, and working memory).

\*The sum of scaled scores is transformed into a normalized standard score with a mean of 100 and a standard deviation of 15.  Standard scores are reported on the table for the FSIQ, NVIQ, VIQ, and all Factor Indexes.

\*All scaled scores are normalized raw scores with a mean of 10 and a standard deviation of 3.  Scaled scores are reported for the Nonverbal and Verbal subtests for each measured cognitive ability (fluid reasoning, knowledge, quantitative reasoning, visual spatial reasoning, and working memory).