A STUDY ON GENDERWISE COMPARISON OF PERFORMANCE OF 4-5 YEARS OLD CHILDREN ON QUANTITATIVE REASONING

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Abstract

This study focuses on the gender wise comparison of performance of school going age children (4-5 years) against a quantitative reasoning test. The foremost purpose of this study was to analyze the capabilities and performance of students against a number series test. Descriptive research methodology was used to accomplish this purpose. The population of this study comprised all school going children of age between 4 & 5 years, both boys and girls are studying in both public and private primary schools of Karachi. Sampling was done through stratified random technique utilizing respondents from 05 districts of Karachi and 20 Primary schools. This study differentiates between (quantitative reasoning) competencies of girls and boys between ages 4-5 years. It was concluded that the performance of girls is better than the boys but it is a reality that children of such ages are not properly trained for any quantitative reasoning tests.

Keywords: Gender wise; Comparison; Performance; Quantitative Reasoning

Introduction

A sound program of educational and psychological testing shapes the solid foundation for a modern, high-quality education system. Intelligence testing began as more or less scientific pursuit to study the individual differences in significance as a tool for predicting school achievement and selecting individuals for various educational programs (Anastasi, A. & Urbina, S., 2006).

Although students can be assessed in a variety of ways, testing in particular is definitely on the rise. This is only to increase for accountability, but also it provides personal, practical and economic growth for students, teachers, parents, schools and states.

Assessing students at such an early age involves the use of a test, usually a standardized test which is purportedly a measure of the abilities, competencies
or basic skills and intelligence. In the past era people mental abilities and intelligence were predicted through facial expressions as expressed by Lavator “Face is the index of mind”.

The assessment process is significant and important as it involves different ways of collecting information about student. Testing, one part of the assessment process, is the administration of specifically designed measures to assess a child’s academic or perceptual, strengths and weaknesses.

Test plays a significant role in school accountability and in grade advancement. Intelligence tests are most helpful when they are used to determine specific skills, abilities, and knowledge, there are a number of skills that an intelligence test attempts to measure:

- Social judgment
- Level of thinking
- Language skills
- Perceptual organization
- Processing speed
- Spatial abilities
- Common sense
- Long and short term memory
- Abstract thinking
- Motor speed
- Word knowledge

In every classroom there are students who have specific skills, abilities, potential, knowledge and difficulties in learning and attention to their potentials and learning problems and specific needs is required to help their progress through assessment.

Assessment in educational settings serves five primary purposes:

- Screening and identification
- Evaluation
- Diagnosis
- Placement
- Instructional planning

Testing is the part of assessment. Testing is often used for three basic purposes: ranking, student placement, and the improvement of learning, instruction, or an institution. The main benefit of testing is that its results
are observable. Ideally, it can help place students in appropriate levels that will enhance their learning process; help teachers better allocate their time and understand specific student needs; provide parents with a measure of school quality; indicate individual school progress.

**Columbia Mental Maturity Scale, 3rd Edition (CMMS) (1970)**

The CMMS is an individual type scale that requires perceptual discrimination involving color, shape, size, use, number, kind, missing parts, and symbolic material. There are no formal subtests on this scale; rather, it is a 92 items of general reasoning abilities. The Age/Grade Levels are 3½ – 10 years.

**McCarthy Scales of Children’s abilities (1972)**

Age/Grade Levels: Ages 2 years-4months to 8 years – 7months

**Subtest Information**

The test consists of 6 scales comprising a variety of 18 subtests.

1. **Verbal Scale**

This scale consists of five subsets; Pictorial Memory, Word Knowledge, Verbal Memory, Verbal Fluency, Opposite Analogies.

2. **Perceptual Performance Scale**


3. **Quantitative Scale**

This scale consists of three subtests: Number Questions, Numerical Memory, Counting and Sorting.

4. **Motor Scale**

This scale consists of three subtests:

- Leg Coordination
- Arm Coordination
- Imitative Action
5. General Cognitive

This scale consists of fifteen subtests. Please refer to the four prior scales for a complete explanation of these subtests:


6. Memory

This scale consists of four subtests: Please refer to the first four scales for a complete explanation of these subtests:

Pictorial Memory, Tapping Sequence, Verbal Memory, Numerical Memory.

OTIS-Lennon School Ability Test (OLSAT-1996)

The test consists of 7 different levels covering ages 5 through 18. Twenty one different types of subtests are organized into 5 clusters and an equal number of verbal and non-verbal items are included at each level. Age/Grade Levels are grades K to 12.

Subtest Information

The five clusters are:

1. Verbal Comprehension – includes following directions, antonyms, sentence completion, and sentence arrangement.
5. Quantitative Reasoning – (given in Levels E through G) – includes number series, numeric inference, and number matrix.
Objective of the Study

1. To study the gender wise comparison of performance of school going age children (4-5 years) against a quantitative reasoning test.

2. To analyze children’s ability, performance and competencies.

Research Question

The following research question has been raised to solve the problem of the study: Is gender wise difference existed among children (4-5) against quantitative reasoning test?

Research Methodology

The overall strategy adopted in the study was based upon descriptive research as applied to education. The population of the study consisted of all school going age children (between 4 & 5 years), both boys and girls at the primary level in the schools of Karachi. A sampling frame of the population was prepared, with samples divided by gender obtained from public and private sectors primary schools of five districts of Karachi and twenty schools in Karachi. Stratified random cluster sampling design was selected in the first stage. The overall population was stratified into five districts of Karachi, East, West, South, Central and Malir. In the 2nd stage, the population was stratified into two categories according to control and public private sectors primary schools. In the third stage, the population was grouped or clustered into each school consisting of 30 respondents. Finally, the population was stratified into boys and girls. The following is the breakdown of the sampling design along with sample sizes.

Research Instrument

The research instrument is comprised a number series test consisting 05 items applied on 4-5 years age children.

1. What number should come next; 1,3,5, .................
2. What number should come next; 1,3,5,7, .................
3. What number should come next; 2,4,6,8, .................
4. What number should come next; 3,6,9, .................
5. What number should come next; 5,10,15, .................
Findings

In number series test, it is perceived that the average scores of girls are 2.16 with standard deviation of 2.009, whereas, boys secured the average scores of 2.02 with standard deviation of 1.953. An average score of total students i.e. 2.09 with standard deviation of 1.981 is also reported in these findings to get another comparative view.

Table 1

Mean & Standard Deviation of Number series Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>%age</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>300</td>
<td>40.4</td>
<td>0</td>
<td>5</td>
<td>2.02</td>
<td>1.953</td>
</tr>
<tr>
<td>Girls</td>
<td>300</td>
<td>43.2</td>
<td>0</td>
<td>5</td>
<td>2.16</td>
<td>2.009</td>
</tr>
<tr>
<td>Overall</td>
<td>600</td>
<td>41.8</td>
<td>0</td>
<td>5</td>
<td>2.09</td>
<td>1.981</td>
</tr>
</tbody>
</table>

Conclusion and Discussion

The objectives of the present study have been met with the conclusion that girls are comparatively good performer against the performance of boys academically. It can be concluded that girls are performing better than the boys on average, not only this but also the performance of girls is bit higher as compared to the overall performances. A part of girls leading performance against boys and overall, it is also observed that the number series test on percentage scale did not meet even 50% achievement from both boys and girls, which is a dilemma that should be considered and to be resolved.

As a mean of intelligence test, psychological & Educational testing play a vital role in educational programming it helps to assess the intellectual abilities, classify, diagnose and carry out the placement of students and betterment of educational program. Number series testing plays same kind of role in the domain of quantitative reasoning that helps in assessing the analysis skill of the student on mathematical grounds.
Recommendations

1. Need based training programs for teachers involved with testing should be introduced.

2. Government should encourage development of intelligence tests in Pakistan especially quantitative reasoning.

3. Intelligence test should be administered and analyzed by trained persons.

4. Findings of tests should be utilized in curriculum planning and in adopting teaching strategies etc.

5. For developing competencies learning law of exercise ought to be applied while instructions.
References


