

## Development Of Early Children's Cognitive Test Instruments

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### Abstract

The research was carried out with the aim of: (1) obtaining an early childhood cognitive ability test instrument aged 5 to 6 years of multiple choice types according to the standard (2). Knowing the cognitive ability level of Kemala Bhayangkari kindergarten children 82 in Magelang city aged 5 to 6 years. The test instrument development activities included the preparation of test grids, writing test items, validation investigations and test reliability (test quality) and assessment of cognitive abilities of early childhood 5 to 6 years. Research Instrument development is carried out in the ongoing thematic learning process. The location of this development research is in Kemala Bhayangkari 82 Kindergarten, Magelang City. Respondents involved were Kemala Bhayangkari kindergarten students aged 5 to 6 years who attended learning until 12 noon, with a total of 30 students. Data collection techniques in this study with test techniques and using research instruments in the form of tests that have been developed with a number of 20 items. Data analysis techniques are quantitative descriptive, with the help of anates program v.4. The results of the analysis are presented in the table to illustrate the quality of the items and histograms on the cognitive ability test results of 30 TK Kemala Bhayangkari 82 children aged 5 to 6 years. The results of this study are: (1) it is known that the quality of the items as follows is very significant as many as 8 items in percent are 40% very significant, significant as many as 6 items in percent are 30% and 6 items are not significant in 30% percent. So that 14 items are valid and can be used, 6 invalid items are invalid and cannot be used. Average = 15.37, standard intersection = 3.56. Test Reliability = 0.78. (2) The level of cognitive abilities of the Kemala Bhayangkari Kindergarten 82 children in Magelang city aged 5 to 6 years are in the good category, 50%.

**Keywords:** *test instrument, cognitive, age 5 to 6 years.*

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### Background

Educational evaluation is very important to do in order to measure success in the implementation of education in every education service provider.

One way to find out the success rate of implementing education is education assessment. Educational assessment is the process of getting information about students' achievements or performance. The results of this assessment are used to evaluate students' learning completeness and the effectiveness of the learning process.

Educational assessment based on competency standards that must be achieved by students. Teachers as educators must carry out assessments to students in order to find out the child's success rate in learning, in an effort to find out the level of success of learning children need one of them by carrying out a measurement test, it is necessary to make a test instrument which is valid and reliable. Sahih and reliable in measuring success according to the competencies that have been set so that there is no misinterpretation in the conclusion of its success.

Educational evaluation must be carried out at every level of education including early childhood education. Early childhood education in Indonesia has been since the time of independence.

The establishment of Taman Siswa National University in Yogyakarta on July 3, 1922 began with the opening of a school for small children under the age of 7 who were named "Taman Lare" or "Taman Anak". The name Taman Anak or Taman Lare then changes to Indria Park which continues to be used today. The reason is because it is viewed from the point of Psychology, the childhood spirit under 7 years is still solely in the period of development of its five senses.

The giving of work to children is principally accustomed to drawing, singing, marching, playing around making handwork freely and regularly, etc. so that order can affect children's inner order. Giving pleasure in learning in childhood is linked to the people's own nature.

The Indonesian government is in a state of independence, always paying attention to education for early childhood. Early childhood education is very important, because at that time the golden age children were developing where all the potential of children must be developed to the maximum in accordance with the Standards of Achievement of Early Childhood Development.

Standards for the Level of Achievement of Early Childhood Development are set out in Permendikbud 137 in 2014. Regulation of the Minister of Education and Culture

Contains the National Standards for Early Childhood Education, one of which is the provision regarding the Level of Achievement of Child Development Ages 5-6 Years. The scope of Early Childhood Development is 1. Value of Religion and Moral 2 Physical Motor 3. Cognitive 4. Language 5 Art.

The five spheres of development are outlined in the standard level of achievement of development and then elaborated in the minimum indicators that are expected to be achieved by children. These minimum indicators can be added by early childhood education institutions.

In developing this test instrument, I took the following core competencies and indicators:

Core Competencies of KI-4: Demonstrating what is known, felt, needed, and thought out through language, music, movement and work productively and creatively, and reflects the behavior of noble children.

Basic Competencies 3.6: Knowing the surrounding objects (name, giving work to children basically is accustomed to drawing, singing, marching, playing around

making handwork freely and regularly, etc. so that birth order can affect inner order giving fun in learning in childhood is linked to the people's own nature. color, shape, size, pattern, nature, sound, texture, function and other characteristics).

4.6: Conveying about what and how things are known around him (name, color, shape, size, pattern, nature, sound, texture, function, and other characteristics) through various works

Material 3.6.2: Shape: circle, triangle, square, square display, oval, cube, cone, tube

4.6.2: Grouping objects based on geometric shapes

3.6.3: Size: small, long, short, light-weight, long, now-yesterday-tomorrow.

4.6.3: Difference between objects based on coarse-fine, short lengths, small size etc.

3.6.4: Pattern: pattern of one indicator AB-AB, ABC-ABC. Two-indicator pattern AB-AB, ABC, ABC

4.6.4: Arranging patterns in sequence and correctly

3.6.7: Concepts and symbols of numbers

The development of children's cognitive abilities when we align with multiple intelligences enters the realm of logical mathematical intelligence. Logical mathematical intelligence is defined as the ability to use numbers well and do the right reasoning.

The core components of logical mathematical intelligence include the sensitivity of patterns and logical relationships, statements and postulates such as "if-then" and cause and effect, logical functions, and other abstraction abstractions.

Logical mathematical intelligence has a unique process. The process includes:

1. Categorization, namely the compilation based on categories, classification based on certain criteria.
2. classification, namely classification based on certain rules or standards.
3. conclusions
4. generalization, namely general conclusions of an event, thing, or data
5. calculation, namely numerical activities, such as calculation and counting
6. Testing hypotheses, namely the activity of checking and trying something to find out the truth of an estimate or guess.

Logical mathematical intelligence also includes heuristic sensitivity that is sensitivity to things that invite curiosity.

## **Research Methodology**

The method used in this study is research and development methods or in English the Search and Development is a research method used to produce a particular product, and test the effectiveness of the product (in Sugiyono, 2017: 407) In this study the test instrument was produced.

Test is a set of stimuli (stimuli) given to a person with the intention of getting answers that can be used as a basis for determining the score score. The score is based on the representative sample from follower's behavior is an indicator of how far the tested person has the characteristics being measured. Two basic requirements for the test are validity and reliability. (In Furchan A, 2007: 268)

Respondents involved were Kemala Bhayangkari kindergarten students aged 5 to 6 years who attended learning until 12 noon, with a total of 30 students. Data collection techniques in this study with test techniques and using research instruments in the form of tests that have been developed with a number of 20 items. Data analysis techniques are quantitative descriptive, with the help of anates program v.4.

### Findings and Discussion

The results of this study include two major parts, namely the validity of the instrument to be used based on the analysis of data anates v.4 and the cognitive abilities of Kindergarten Kemala Bhayangkari 82 children aged 5 to 6 years who attend learning until 12 noon.

The first result is the validity of the test instrument that we can report as follows:

Weighted Data Score

Number of Subjects = 30

Number of items = 20

True jwb weight = 1

The number of times is incorrect = 0

Reliability Test

Average = 15.37

Baku intersection = 3.56

Correlation XY = 0.64

Test Reliability = 0.78

Difficulty

No. Item	Jml Right	Difficulty (%)	Interpretation
1	24	80.00	Easy
2	25	83.33	Easy
3	17	56.67	Medium
4	21	70.00	Medium
5	21	70.00	Medium
6	26	86.67	Very Easy
7	27	90.00	Very Easy
8	26	86.67	Very Easy
9	28	93.33	Very Easy
10	27	90.00	Very Easy
11	26	86.67	Very Easy
12	21	70.00	Medium
13	12	40.00	Medium

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No. Item	Jml Right	Difficulty (%)	Interpretation
14	23	76.67	Easy
15	13	43.33	Medium
16	25	83.33	Easy
17	28	93.33	Very Easy
18	26	86.67	Very Easy
19	28	93.33	Very Easy
20	17	56.67	Medium

Correlation of Item Score and Total Score

NO	Correlation	Signification Item
1	0.291	-
2	0.354	-
3	0.438	Significant
4	0.485	Significant
5	0.505	Significant
6	0.658	Very Significant
7	0.797	Very significant
8	0.490	Significant
9	0.525	Significant
10	0.353	-
11	0.630	Very Significant
12	0.401	-
13	0,070	-
14	0.621	Very significant
15	-0.149	-
16	0.712	Very Significant
17	0.563	Very Significant
18	0.742	Very Significant
19	0.830	Very Significant
20	0.547	Significant

In the table above states that 6 items are not significant, 5 items are significant and 9 items are very significant.

**Conclusion**

The results of this study are:

1. known test reliability

Average = 15.37

Baku intersection = 3.56

XY correlation = 0.64

Test Reliability = 0.78

6 items were not significant, 5 items were significant and 9 items were very significant.

2. The results of the measurement of cognitive abilities of the Kemala Bhayangkari Kindergarten 82 children in the city of Magelang aged 5 to 6 years are in the good category 50%, the ability is enough 13% less 37%.

### **References**

- Dewantara Ki Hadjar. (2013). *Pemikiran, Konsepsi, Keteladanan, Sikap Merdeka 1 (Pendidikan)*. Yogyakarta Penerbit Universitas Sarjanawiyata Tamansiswa (UST-Perss) bekerjasama dengan Majelis Luhur Persatuan Tamansiswa
- Surapranata Sumarna. (2009). *Analisis, Validitas, Reliabilitas dan interpretasi hasil tes implementasi kurikulum*. Bandung: PT Remaja Rosdakarya
- Sugiyono. (2018). *Metode Penelitian Pendidikan Pendekatan Kuantitatif, kualitatif, dan R D*. Bandung: Alfabeta Jakarta
- Furchan Arief, (2007). *Pengantar Penelitian Dalam Pendidikan*. Yogyakarta: Pustaka Pelajar
- Mendikbud RI. Peraturan Menteri Pendidikan dan Kebudayaan Nomor 137 tahun 2014 tentang Standar Tingkat Pencapaian Perkembangan Anak Usia Dini (2014).
- Musfiroh Tadkiratun. (2010). *Pengembangan Kecerdasan Majemuk*. Jakarta: Universitas Terbuka, 2010.