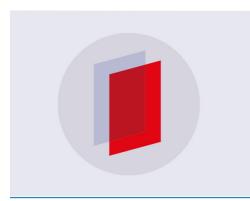
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## Potential Test Gifted and Talented Children: Study of Elementary School in Indonesia

Nurhastuti<sup>1\*</sup>, Ahman<sup>2</sup>, Juntika<sup>2</sup> and Eko Susanto<sup>3</sup>

<sup>1</sup>Universitas Negeri Padang, Padang, Sumatera Barat, Indonesia.

<sup>2</sup>Universitas Pendidikan Indonesia, Bandung, Jawa Barat, Indonesia.

<sup>3</sup>Universitas Muhammadiyah Metro, Kota Metro, Lampung, Indonesia.

<sup>\*</sup> hastuti.plb@gmail.com

Abstract. This study is an attempt to get a standardized instrument to reveal the potential ability of gifted and talented children. The purpose of this study was to produce a measuring tool for locate potential gifted and talented children. Samples of this research is student academic achievement in elementary school with school characteristics featured are 14 primary schools in Java and Sumatra, as many as 430 students. The results of this study are: (1) The result of the content validity measuring instrument indicates that the instrument has met the validity of the content.(2) The legibility test results show that all children have been able to understand and know well from the use of language, content and intent of questions. (3) Construct validity of test results showed that all items instruments have demonstrated high validity. (4) Concurrent validity of test results showed that the instrument has a high categories correlation with IQ test. (5) Predictive validity of test results showed that the instrument has a high correlation with the value of learning outcomes. (6) Internal consistency reliability of test result indicates that the instrument has the reliability and reliable in measuring the potential gifted and talented children. (7) Reliability test results with retest reliability instrument indicates that the instrument has a degree of test scores consistently over time. (8) Index of discrimination of test result has levels of varying difficulty, in which groups of children above class has an average value of about higher compared to average about lower class. (9) Index of difficulty test result indicates that the instrument has a difficulty level that is not balanced the proportion of questions for the category of being larger than the proportion of questions for the category of difficult and easy. Instruments limitations there are several things: (1) Working time in this instrument requires considerable time; (2) Imbalance about every aspect; (3) The cost of testing is quite expensive.

#### 1. Introduction

In general, the purpose of education is to provide an environment that allows students to develop their talents and abilities optimally, so that it can manifest itself and to function fully in accordance with their personal and societyneeds. In the past people usually mean "gifted and talented children" as a child who has a level of intelligence (IQ) high. However, it is now increasingly recognized that the determining giftedness, not just intelligence (intelligence), but also creativity and motivation.

The main mistake of looking at gifted and talented children which cause not only the child is not detected as a gifted and talented children but also even be detected as a problem child, is because the concept of gifted and talented children are still many parties, both the profession and practitioners such as doctors,



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psychologists, pedagogue, teacher, and also the parents and the general public, still using the old concepts (Gagne, 2008; Gardner, 1999). The old concept of this form of gifted and talented children only be understood as a single factor, namely the factor of intelligence or cognitive development that is observed is intelligence that can be shown by the high level of intelligence through standard tests of IQ.

So far, there has been no comprehensive instrument that can detect potential of gifted and talented children. Existing instruments identified for gifted and talented childrenonly partially generally through intelligence approach. This causes the instrument cannot capture at once the potential of gifted and talented children and ultimately potential discovery process cannot be performed optimally.

Attempts to find exactly children belonging gifted and talented children will require the identification process. The identification process is part of efforts gifted and talented children detection. Gifted and talented children identification purposes is to find students whose needs are not being met by a core curriculum that is applied in the conventional school system.

Identification gifted and talented children should not stop the efforts to find a particular personality characteristics as described above, but must be followed by measuring the way certain aspects so that the child in question can be detected to have a certain potential to be developed. The need for special attention to gifted and talented children is an effort to develop the full potential of learners and optimal (Van Tassel, 1992).

In discovering and determining gifted and talented childrencannot be done just like that, the necessary research and measurement. In determining that gifted children need to use a multidimensional approach which recognized the diversity in the criteria of the concept of giftedness children, requiring a variety of ways and means which are uniform in determining who gifted children. This means also that the question should be questioned anyway gifted and talented children identification of the measuring instrument. To what extent is a gifted and talented children has the potential to be developed.

Accordingly, this study tries to find a measuring tool that can be used to identify potential of gifted and talented children. Measuring tools is very important in finding potential of gifted and talented children. The availability of a reliable measurement tool is fundamental that must be met because the measuring instrument is a guide to steer gifted and talented children on the development of their potential. The measuring instrument used is the 'Test'. Understanding tests in this study is a set of questions or exercises or other tools used to measure the skills, knowledge, intelligence, abilities, or talents possessed by gifted and talented children. Based on the background mentioned above, the problem in this research is: "What kind of measuring instrument to identify potential of gifted and talented children?".

#### 2. Methods

This research is a development aimed at developing and validating thetestsof potential identification for gifted and talented children. Stages of development of the instrument in this study include the following stages:

- 1. Development of theoretical studies and field studies related to potential instrument measuring for gifted and talented children.
- 2. Preparation of the initial draft identification tests for gifted and talented children.
- 3. Doing expert judgment by 6 experts associated with the instrument that is 2 expert gauges, 1 expert gifted and talented children, 2 expert guidance and counseling, and one expert Bahasa Indonesian.
- 4. Revise unity results from the research paper input and expert judgment and rearranging them in the form of Draft I.
- 5. To test the readability of the 30 students, where the readability test results conducted a second revision and recast in the form of Draft II.
- 6. Empirical testing the first stage (limited test) involving 30 students and then performed the test analysis of the level of difficulty, different power level test, test of validity (construct validity, concurrent validity, predictive validity), and test the reliability (internal consistency).
- 7. Do a third revision limited trial results and rearranging them in the form of Draft III.
- 8. To test empirically the second phase (pilot scale widely-1) involving 100 students and then performed the test analysis the level of difficulty, test the power level difference, the test of validity (construct validity, concurrent validity, predictive validity), and reliability testing (internal consistency).
- 9. Revise the fourth large-scale trial results of unity and putting it back in the form of Draft IV.
- 10. To test empirically the third phase (pilot scale broad-2) involving 300 students and then performed the test analysis the level of difficulty, test the power level difference, the test of validity (construct validity, concurrent validity, predictive validity), and reliability testing (internal consistency).

11. Revise the fifth and the test is limited to 30 students to conduct re-test analysis (Test retest reliability).

12. Develop instruments as the final product.

Test instruments are developed based on the theory Marland (1972). As is the gifted and talented children by Marland (1972) are: Children capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas, singly or in combination: (1) General intellectual ability, (2) Specific academic aptitude, (3) Creative or productive thinking, (4) Leadership ability, (5) Visual and performance arts, (6) Kinestetic Ability.

#### 3. Result and Discussion

#### 3.1. Instrument Expert Judgment

Before performing statistical analysis of test instrument, the potential instrument of gifted and talented children has done the weighing test analysis expert. Weighing an expert in the study of six people who are experts in the field of grammar, a field instrument gauges, gifted and talented children field, the field of guidance and counseling and Indonesian experts. In this expert judgment was analyzed with Cochran Q test with the following provisions.

#### 3.2. General Intellectual Ability

Based on the results of expert judgment on general intellectual ability by using the Cochran Q test data on Table 1.

| No          | Statistical | Review Test Results |              |              |  |  |
|-------------|-------------|---------------------|--------------|--------------|--|--|
| INO         | Statistical | Language            | Content      | Construct    |  |  |
| 1           | Ν           | 90                  | 90           | 90           |  |  |
| 2           | Cochran's Q | 10.798              | 1.667        | 2.069        |  |  |
| 3           | Asymp. Sig. | 0.056               | 0.893        | 0.840        |  |  |
| Information |             | No Different        | No Different | No Different |  |  |

Table 1. Expert judgment: general intellectual ability

The results of expert judgment, instruments on general intellectual ability can be concluded that the expert judgment give different opinions that are not about language, content and contruct in instruments of general intellectual ability. Therefore, the overall instrument worthy of general intellectual abilities into research instruments.

#### 3.3. Specific academic aptitude

Based on the results of expert judgment on specific academic aptitude by using the Cochran Q test data on Table 2.

|               | Table 2. Expert judgment: specific academic aptitude |              |                     |              |  |  |  |
|---------------|--|--------------|---------------------|--------------|--|--|--|
| No            | Statistical  |              | Review Test Results |              |  |  |  |
| INO           | Statistical —  | Language     | Content             | Construct    |  |  |  |
| 1             | Ν  | 91           | 91                  | 91           |  |  |  |
| 2             | Cochran's Q  | 10.000       | 10.000              | 10.000       |  |  |  |
| 3 Asymp. Sig. |  | 0.075        | 0.075               | 0.075        |  |  |  |
| Information   |  | No Different | No Different        | No Different |  |  |  |

The results of expert judgment, instruments on specific academic aptitude can be concluded that the expert judgment give different opinions that are not about language, content and construct in instruments of specific academic aptitude. Therefore, the overall instrument worthy of specific academic aptitude into research instruments.

#### 3.4. Creative and Productive Thinking

Based on the results of expert judgment on creative and productive thinking by using the Cochran Q test data on Table 3.

| No   | Statistical | Review Test Results |                    |                    |  |  |  |
|------|-------------|---------------------|--------------------|--------------------|--|--|--|
| INU  | Statistical | Language            | Content            | Construct          |  |  |  |
| 1    | Ν           | 5                   | 5                  | 5                  |  |  |  |
| 2    | Cochran's Q | 55.000              | 55.000             | 55.000             |  |  |  |
| 3    | Asymp. Sig. | 0.000               | 0.000              | 0.000              |  |  |  |
| Info | rmation     | Different           | Different          | Different          |  |  |  |
| Imp  | rovement    | Aspect Item Kel. 2  | Aspect Item Kel. 3 | Aspect Item Kel. 2 |  |  |  |
|      |             | Aspect Item Kel. 3  |                    | Aspect Item Kel. 3 |  |  |  |

Table 3. Expert judgment: creative and productive thinking

The results of the expert judgment on creative and productive thinking can be concluded that the expert judgment give different opinions regarding language, content and instruments construct in creative and productive thinking. Therefore, the instrument of creative and productive thinking undergone various changes to questions and sub-indicators, especially for sub-indicators 2, 3 sub-indicators and sub indicators 4. Researchers make changes to the sub-indicators and instruments inquiry item corresponding to the input of an expert judgment.

#### 3.5. Leadership Ability

Based on the results of expert judgment on leadership ability by using the Cochran Q test data on Table 4.

| No          | Statistical | Review Test Results |              |              |  |  |  |
|-------------|-------------|---------------------|--------------|--------------|--|--|--|
|             | Statistical | Language            | Content      | Construct    |  |  |  |
| 1           | Ν           | 60                  | 60           | 60           |  |  |  |
| 2           | Cochran's Q | 4.831               | 3.438        | 3.738        |  |  |  |
| 3           | Asymp. Sig. | 0.437               | 0.633        | 6.33         |  |  |  |
| Information |             | No Different        | No Different | No Different |  |  |  |

Table 4. Expert judgment: leadership ability.

Based on the results of expert judgment, instruments on leadership ability can be concluded that the expert judgment give different opinions that are not about language, content and contruct in instruments of leadership ability. Therefore, the overall instrument worthy of leadership ability into research instruments.

#### 3.6. Visual and Performing Arts Ability

Based on the results of expert judgment on visual and performing arts ability by using the Cochran Q test data on Table 5.

| No   | Statistical | Review Test Results |              |              |  |  |  |
|------|-------------|---------------------|--------------|--------------|--|--|--|
| INO  | Statistical | Language            | Content      | Construct    |  |  |  |
| 1    | Ν           | 105                 | 105          | 105          |  |  |  |
| 2    | Cochran's Q | 2.799               | 4.209        | 2.799        |  |  |  |
| 3    | Asymp. Sig. | .731                | 0.520        | 0.731        |  |  |  |
| Info | ormation    | No Different        | No Different | No Different |  |  |  |

Table 5. Expert judgment: visual and performing arts ability

The results of expert judgment, instruments on visual and performing arts ability can be concluded that the expert judgment give different opinions that are not about language, content and contruct in instruments of visual and performing arts ability. Therefore, the overall instrument worthy of visual and performing arts ability into research instruments.

#### 3.7. Kinesthetic Ability

Based on the results of expert judgment on kinesthetic ability by using the Cochran Q test data on Table 6.

| No          | Statistical | Review Test I | Review Test Results |              |  |  |  |  |
|-------------|-------------|---------------|---------------------|--------------|--|--|--|--|
| INO         | Statistical | Language      | Content             | Construct    |  |  |  |  |
| 1           | Ν           | 30            | 30                  | 30           |  |  |  |  |
| 2           | Cochran's Q | 1.563         | 1.563               | 0.692        |  |  |  |  |
| 3           | Asymp. Sig. | 0.906         | 0.906               | 0.983        |  |  |  |  |
| Information |             | No Different  | No Different        | No Different |  |  |  |  |

Table 6. Expert judgment: kinesthetic ability

Based on the results of expert judgment, instruments on kinesthetic ability can be concluded that the expert judgment give different opinions that are not about language, content and contruct in instruments of kinesthetic ability. Therefore, the overall instrument worthy of kinesthetic ability into research instruments.

#### 3.8. Readability Testing

Readability test conducted to 30 students to know their opinions and suggestions from students on the procedures and understanding of each question word instrument in this study. Recapitulation time about the completion of the overall indicator of potential testsfor gifted and talented children that researchers developed can be seen in the Table 7.

| No. | Aspect                             | Number of Items | Time (Minutes) |
|-----|------------------------------------|-----------------|----------------|
| 1.  | General Intellectual Ability       | 90              | 41             |
| 2.  | Specific Academic Aptitude         | 91              | 30             |
| 3.  | Creative and Productive Thinking   | 5               | 25             |
| 4.  | Leadership Ability                 | 60              | 18             |
| 5.  | Visual and Performing Arts Ability | 105             | 45             |
| 6.  | Kinesthetic Ability                | 30              | 15             |

Test legibility in 381 test items results in improvement in the language of questions identification test gifted and talented children easily understood by the respondent and the matter has the same meaning items selected one.

#### 3.9. Limited Testing

The first test on potential instruments of gifted and talented children done to 30 elementary school students from the elementary school in the city of Padang.

#### 3.10. Construct Validity Testing

Construct validity test is done by using the formula Pearson Product Moment by using SPSS for Windows 20.0. Based on the analysis of data Table 8.

| Table 8. Readability testing |                                    |        |      |              |        |           |       |
|------------------------------|------------------------------------|--------|------|--------------|--------|-----------|-------|
|                              | Aspect                             | Number | of - | Test Results |        |           |       |
| No.                          |                                    |        |      | Item         | Number | Number of | Items |
|                              |                                    | Items  |      | Valid        |        | Invalid   |       |
| 1.                           | General Intellectual Ability       | 90     |      | 83           |        | 7         |       |
| 2.                           | Specific Academic Aptitude         | 91     |      | 83           |        | 8         |       |
| 3.                           | Creative and Productive Thinking   | 5      |      | 5            |        | 0         |       |
| 4.                           | Leadership Ability                 | 60     |      | 55           |        | 5         |       |
| 5.                           | Visual and Performing Arts Ability | 105    |      | 99           |        | 6         |       |
| 6.                           | Kinesthetic Ability                | 30     |      | 27           |        | 3         |       |
| Tota                         |                                    | 381    |      | 352          |        | 29        |       |

According to the table above can be explained that there are 352 achievement that is otherwise valid test that deserve to be instruments of research and there are 29 achievement test are declared invalid and should be revised.

#### 3.11. Concurrent Validity Testing

The analysis is done by correlating the total score of the results of the measuring instrument potential gifted and talented children with the IQ test results of students using the formula Pearson Product Moment. Conditions, if the value is greater Pearson Product Moment equal to 0.6, then declared valid, whereas if the value is smaller Pearson Product Moment 0.6, then declared invalid (Table 9).

| No   | Aspect                          | Average<br>Scores | Test | Average IQ Tests | Value | Criteria |
|------|---------------------------------|-------------------|------|------------------|-------|----------|
| 1    | General Intellectual Ability    | 76                |      | 129              | 0,765 | Valid    |
| 2    | Specific academic aptitude      | 89                |      | 129              | 0,781 | Valid    |
| 3    | Creative or productive thinking | 40                |      | 129              | 0,792 | Valid    |
| 4    | Leadership ability              | 45                |      | 129              | 0,807 | Valid    |
| 5    | Visual and performance arts     | 102               |      | 129              | 0,741 | Valid    |
| 6    | Kinesthetic Ability             | 16                |      | 129              | 0,799 | Valid    |
| Enti | re Measurement Tools            | 402               |      | 129              | 0,742 | Valid    |

Overall based on a total score of the measuring instrument obtained a value of 0.742 means  $0.742 \ge 0.600$ , then declared valid.

#### 3.12. Predictive Validity Testing

The analysis is done by correlating the total score of the potential test of gifted and talented childrenresults with the results rapor by using the formula Pearson Product Moment. Conditions, if the value is greater Pearson Product Moment equal to 0.6, then declared valid, whereas if the value is smaller Pearson Product Moment 0.6, then declared invalid (Table 10).

| No   | Aspect                          | Average<br>Scores | Test | Average Rapor | Value | Criteria |
|------|---------------------------------|-------------------|------|---------------|-------|----------|
| 1    | General Intellectual Ability    | 76                |      | 93            | 0,719 | Valid    |
| 2    | Specific Academic Aptitude      | 89                |      | 93            | 0,704 | Valid    |
| 3    | Creative or Productive Thinking | 40                |      | 93            | 0,737 | Valid    |
| 4    | Leadership Ability              | 45                |      | 93            | 0,761 | Valid    |
| 5    | Visual and Performance Arts     | 102               |      | 93            | 0,664 | Valid    |
| 6    | Kinesthetic Ability             | 16                |      | 93            | 0,856 | Valid    |
| Enti | re Measurement Tools            | 402               |      | 93            | 0,763 | Valid    |

Table 10. Predictive Validity Testing

Overall based on a total score of the measuring instrument obtained a value of 0.763 means  $0.763 \ge 0.600$ , then declared valid.

#### 3.13. Reliability Test Results with Internal Consistency

Test reliability is based on the value of Cronbach'sAlpha ( $\alpha$ ), if the value of Cronbach'sAlpha ( $\alpha$ ) greater than 0,600, the data research is considered good enough and reliable to be used as input in the process of analyzing research data (Table 11).

| No. | Aspect                          | Test | Cronbach | Information |
|-----|---------------------------------|------|----------|-------------|
|     | •                               |      | Alpha    |             |
| •   | General Intellectual Ability    | 1    | 0,844    | Reliabel    |
|     |                                 | 2    | 0,827    | Reliabel    |
|     |                                 | 3    | 0,859    | Reliabel    |
|     |                                 | 4    | 0,813    | Reliabel    |
|     |                                 | 5    | 0,836    | Reliabel    |
|     |                                 | 6    | 0,822    | Reliabel    |
|     |                                 | 7    | 0,875    | Reliabel    |
|     |                                 | 8    | 0,887    | Reliabel    |
|     |                                 | 9    | 0,853    | Reliabel    |
| 2.  | Specific Academic Aptitude      | 1    | 0,811    | Reliabel    |
|     |                                 | 2    | 0,820    | Reliabel    |
|     |                                 | 3    | 0,868    | Reliabel    |
|     |                                 | 4    | 0,857    | Reliabel    |
|     |                                 | 5    | 0,841    | Reliabel    |
|     |                                 | 6    | 0,892    | Reliabel    |
|     |                                 | 7    | 0,873    | Reliabel    |
|     |                                 | 8    | 0,840    | Reliabel    |
|     |                                 | 9    | 0,872    | Reliabel    |
|     |                                 | 10   | 0,855    | Reliabel    |
|     | Creative or Productive Thinking | 1    | 0,871    | Reliabel    |
|     | -                               | 2    | 0,890    | Reliabel    |
|     |                                 | 3    | 0,863    | Reliabel    |
|     |                                 | 4    | 0,875    | Reliabel    |
|     |                                 | 5    | 0,883    | Reliabel    |
| ŀ.  | Leadership Ability              | 1    | 0,842    | Reliabel    |
|     | 1 2                             | 2    | 0,873    | Reliabel    |
|     |                                 | 3    | 0,887    | Reliabel    |
|     |                                 | 4    | 0,858    | Reliabel    |
|     |                                 | 5    | 0,806    | Reliabel    |
|     |                                 | 6    | 0,894    | Reliabel    |
| 5.  | Visual and Performance Arts     | 1    | 0,824    | Reliabel    |
|     |                                 | 2    | 0,857    | Reliabel    |
|     |                                 | 3    | 0,873    | Reliabel    |
|     |                                 | 4    | 0,858    | Reliabel    |
|     |                                 | 5    | 0,876    | Reliabel    |
|     |                                 | 6    | 0,825    | Reliabel    |
|     |                                 | 7    | 0,848    | Reliabel    |
|     |                                 | 8    | 0,854    | Reliabel    |
|     |                                 | 9    | 0,863    | Reliabel    |
|     |                                 | 10   | 0,835    | Reliabel    |
|     |                                 | 10   | 0,835    | Reliabel    |
| 5.  | Kinesthetic Ability             | 1    | 0,822    | Reliabel    |
|     | Exhibition Formity              | 2    | 0,822    | Reliabel    |
|     |                                 | 3    | 0,830    | Reliabel    |
|     |                                 | 3    | 0,857    | Kellabel    |

Overall achievement test in this instrument has a value of Cronbach's Alpha ( $\alpha$ ) greater than 0,600 so it can be stated that the achievement test used is reliable.

#### 3.14. Index of Discrimination

Based on the results of testing to 30 elementary students obtained the degree of difficulty of instruments as follows.

|     |                                 | Degree of Difficulty |               |     |       |    |                 |     | TF ( 1 |  |
|-----|---------------------------------|----------------------|---------------|-----|-------|----|-----------------|-----|--------|--|
| No  | Aspect                          | Har                  | Hard Moderate |     | Eas   | у  | 91 100<br>5 100 |     |        |  |
|     | -                               | F                    | %             | F   | %     | F  | %               | F   | %      |  |
| 1   | General Intellectual Ability    | 15                   | 16.67         | 56  | 62.22 | 19 | 21.11           | 90  | 100    |  |
| 2   | Specific Academic Aptitude      | 22                   | 24.18         | 47  | 51.65 | 22 | 24.18           | 91  | 100    |  |
| 3   | Creative or Productive Thinking | 1                    | 20.00         | 2   | 40.00 | 2  | 40.00           | 5   | 100    |  |
| 4   | Leadership Ability              | 17                   | 28.33         | 29  | 48.33 | 14 | 23.33           | 60  | 100    |  |
| 5   | Visual and Performance Arts     | 31                   | 29.52         | 52  | 49.52 | 22 | 20.95           | 105 | 100    |  |
| 6   | Kinesthetic Ability             | 7                    | 23.33         | 16  | 53.33 | 7  | 23.33           | 30  | 100    |  |
| Sum | l                               | 93                   | 24.41         | 202 | 53.02 | 86 | 22.57           | 381 | 100    |  |

Table 12. Index of Discrimination

Based on the table, it can be seen that for instruments categorized as difficult as many as 93 questions, 202 questions including the medium category and 86 questions categorized easily. This suggests that the overall sample is able to understand and fill every question properly.

#### 3.15. Index of Difficulty

Based on test results obtained with the 30 elementary school students different power level instruments with the use of upper class and lower class, respectively 9 students as follows.

#### Table 13. Index of Difficulty

| No | Aspect                          | Upper Class | Lower Class |
|----|---------------------------------|-------------|-------------|
| 1  | General Intellectual Ability    | 8.64        | 6.24        |
| 2  | Specific academic aptitude      | 7.24        | 5.46        |
| 3  | Creative or productive thinking | 7.71        | 5.48        |
| 4  | Leadership ability              | 8.12        | 5.82        |
| 5  | Visual and performance arts     | 7.11        | 5.78        |
| 6  | Kinesthetic Ability             | 7.62        | 5.34        |

#### 3.16. Size Scale Test Number 1

Size scaletest number 1 on potential test for gifted and talented childrenperformed on 100 elementary school students from the four elementary schools in some areas in the province of West Sumatra, North Sumatra, Jambi and Bangka Belitung.

#### 3.17. Construct Validity

Construct validity test is done by using the formula Pearson Product Moment by using SPSS for Windows 20.0. Based on the analysis of data obtained as follows.

| No.   | Aspect                             | Number<br>of Items | Test Results<br>Item Number<br>Valid | Number of Items<br>Invalid |
|-------|------------------------------------|--------------------|--------------------------------------|----------------------------|
| 1.    | General Intellectual Ability       | 90                 | 86                                   | 4                          |
| 2.    | Specific Academic Aptitude         | 91                 | 89                                   | 2                          |
| 3.    | Creative and Productive Thinking   | 5                  | 5                                    | 0                          |
| 4.    | Leadership Ability                 | 60                 | 57                                   | 3                          |
| 5.    | Visual and Performing Arts Ability | 105                | 101                                  | 4                          |
| 6.    | Kinesthetic Ability                | 30                 | 29                                   | 1                          |
| Total |                                    | 381                | 362                                  | 19                         |

#### Table 14. Construct Validity

According to the table above can be explained that there are 362 achievement that is otherwise valid test that deserve to be instruments of research and there are 19 achievement test are declared invalid and should be revised.

#### 3.18. Concurrent Validity

The analysis is done by correlating the total score of the results of the measuring instrument potential gifted and talented children with the IQ test results of students using the formula Pearson Product Moment. Conditions, if the value is greater Pearson Product Moment equal to 0.6, then declared valid, whereas if the value is smaller Pearson Product Moment 0.6, then declared invalid.

| No    | Aspect                          | Average<br>Scores | Test | Average<br>Tests | IQ | Value | Criteria |
|-------|---------------------------------|-------------------|------|------------------|----|-------|----------|
| 1     | General Intellectual Ability    | 71                |      | 116              |    | 0,641 | Valid    |
| 2     | Specific academic aptitude      | 88                |      | 116              |    | 0,750 | Valid    |
| 3     | Creative or productive thinking | 32                |      | 116              |    | 0,811 | Valid    |
| 4     | Leadership ability              | 41                |      | 116              |    | 0,845 | Valid    |
| 5     | Visual and performance arts     | 98                |      | 116              |    | 0,622 | Valid    |
| 6     | Kinesthetic Ability             | 15                |      | 116              |    | 0,864 | Valid    |
| Total |                                 | 368               |      | 116              |    | 0,788 | Valid    |

Table 15. Concurrent Validity

Overall based on a total score of the measuring instrument obtained a value of 0.788 means  $0.788 \ge 0.600$ , then declared valid.

#### 3.19. Predictive Validity

The analysis is done by correlating the total score of the potential test of gifted and talented children results with the results rapor by using the formula Pearson Product Moment. Conditions, if the value is greater Pearson Product Moment equal to 0.6, then declared valid, whereas if the value is smaller Pearson Product Moment 0.6, then declared invalid.

| No   | Aspect                          | Average<br>Scores | Test | Average<br>Rapor | Value | Criteria |
|------|---------------------------------|-------------------|------|------------------|-------|----------|
| 1    | General Intellectual Ability    | 71                |      | 91               | 0,624 | Valid    |
| 2    | Specific Academic Aptitude      | 88                |      | 91               | 0,672 | Valid    |
| 3    | Creative or Productive Thinking | 32                |      | 91               | 0,721 | Valid    |
| 4    | Leadership Ability              | 41                |      | 91               | 0,754 | Valid    |
| 5    | Visual and Performance Arts     | 98                |      | 91               | 0,623 | Valid    |
| 6    | Kinesthetic Ability             | 15                |      | 91               | 0,842 | Valid    |
| Tota | al                              | 368               |      | 91               | 0,728 | Valid    |

 Table 16. Predictive Validity

Overall based on a total score of the measuring instrument obtained a value of 0.728 means  $0.728 \ge 0.600$ , then declared valid.

#### 3.20. Reliability Test with Internal Consistency

Instrument said to be reliable if it meets  $CR \ge 0.70$  and VE > 0.5 so that the instrument can be used as input in the process of analyzing research data.

| No  | Aspect                          | Test | Test Res | Test Result |               |  |
|-----|---------------------------------|------|----------|-------------|---------------|--|
| No. | Aspect                          | rest | CR       | VE          | — Information |  |
| 1.  | General Intellectual Ability    | 1    | 0,88     | 0,5         | Reliabel      |  |
|     | -                               | 2    | 0,85     | 0,6         | Reliabel      |  |
|     |                                 | 3    | 0,83     | 0,6         | Reliabel      |  |
|     |                                 | 4    | 0,93     | 0,6         | Reliabel      |  |
|     |                                 | 5    | 0,94     | 0,6         | Reliabel      |  |
|     |                                 | 6    | 0,91     | 0,6         | Reliabel      |  |
|     |                                 | 7    | 0,96     | 0,7         | Reliabel      |  |
|     |                                 | 8    | 0,94     | 0,6         | Reliabel      |  |
|     |                                 | 9    | 0,93     | 0,6         | Reliabel      |  |
| 2.  | Specific Academic Aptitude      | 1    | 0,94     | 0,6         | Reliabel      |  |
|     | 1 1                             | 2    | 0,95     | 0,7         | Reliabel      |  |
|     |                                 | 3    | 0,93     | 0,6         | Reliabel      |  |
|     |                                 | 4    | 0,93     | 0,5         | Reliabel      |  |
|     |                                 | 5    | 0,81     | 0,5         | Reliabel      |  |
|     |                                 | 6    | 0,89     | 0,6         | Reliabel      |  |
|     |                                 | 7    | 0,95     | 0,5         | Reliabel      |  |
|     |                                 | 8    | 0,90     | 0,6         | Reliabel      |  |
|     |                                 | 9    | 0,89     | 0,5         | Reliabel      |  |
|     |                                 | 10   | 0,95     | 0,6         | Reliabel      |  |
| 3.  | Creative or Productive Thinking | 1    | 0,95     | 0,0         | Reliabel      |  |
| 5.  |                                 | 2    | 0,95     | 0,7         | Reliabel      |  |
|     |                                 | 3    | 0,85     | 0,5<br>0,6  | Reliabel      |  |
|     |                                 | 4    | 0,88     | 0,0         | Reliabel      |  |
|     |                                 | 5    | 0,88     | 0,5         | Reliabel      |  |
| 4.  | Leadership Ability              | 1    | 0,89     | 0,5         | Reliabel      |  |
| ÷.  | Leadership Admity               | 2    | 0,90     | 0,7         | Reliabel      |  |
|     |                                 | 3    | 0,95     | 0,7<br>0,6  | Reliabel      |  |
|     |                                 | 4    | 0,92     | 0,0<br>0,6  | Reliabel      |  |
|     |                                 | 5    | 0,85     | 0,0<br>0,6  | Reliabel      |  |
|     |                                 | 6    |          |             | Reliabel      |  |
| 5.  | Visual and Performance Arts     | 1    | 0,94     | 0,6         |               |  |
| ).  | Visual and Fertormance Arts     |      | 0,92     | 0,6         | Reliabel      |  |
|     |                                 | 2    | 0,92     | 0,6         | Reliabel      |  |
|     |                                 | 3    | 0,97     | 0,8         | Reliabel      |  |
|     |                                 | 4    | 0,95     | 0,7         | Reliabel      |  |
|     |                                 | 5    | 0,93     | 0,6         | Reliabel      |  |
|     |                                 | 6    | 0,91     | 0,7         | Reliabel      |  |
|     |                                 | 7    | 0,98     | 0,9         | Reliabel      |  |
|     |                                 | 8    | 0,96     | 0,7         | Reliabel      |  |
|     |                                 | 9    | 0,97     | 0,8         | Reliabel      |  |
|     |                                 | 10   | 0,96     | 0,8         | Reliabel      |  |
|     |                                 | 11   | 0,92     | 0,7         | Reliabel      |  |
| 5.  | Kinesthetic Ability             | 1    | 0,92     | 0,5         | Reliabel      |  |
|     |                                 | 2    | 0,95     | 0,7         | Reliabel      |  |
|     |                                 | 3    | 0,84     | 0,6         | Reliabel      |  |

 Table 17. Internal Consistency

Overall achievement test in this instrument has a CR value  $\ge 0.70$  and VE> 0.5 so that it can be stated that the achievement test used is reliable.

#### 3.21. Degree of Difficulty

Based on the results of testing to 100 elementary students obtained the degree of difficulty of instruments as follows.

|      |                                 | Deg | gree of D | oifficul | ty    |     |       | Tota |     |
|------|---------------------------------|-----|-----------|----------|-------|-----|-------|------|-----|
| No   | Aspect                          | Har | ď         | Mod      | erate | Eas | у     | Tota |     |
|      |                                 | F   | %         | F        | %     | F   | %     | F    | %   |
| 1    | General Intellectual Ability    | 15  | 16.67     | 56       | 62.22 | 19  | 21.11 | 90   | 100 |
| 2    | Specific Academic Aptitude      | 20  | 21.98     | 46       | 50.55 | 24  | 26.37 | 91   | 100 |
| 3    | Creative or Productive Thinking | 1   | 20.00     | 2        | 40.00 | 2   | 40.00 | 5    | 100 |
| 4    | Leadership Ability              | 13  | 21.67     | 33       | 55.00 | 14  | 23.33 | 60   | 100 |
| 5    | Visual and Performance Arts     | 24  | 22.86     | 59       | 56.19 | 22  | 20.95 | 105  | 100 |
| 6    | Kinesthetic Ability             | 7   | 23.33     | 14       | 46.67 | 9   | 30.00 | 30   | 100 |
| Tota | վ                               | 80  | 21.00     | 210      | 55.12 | 90  | 23.62 | 381  | 100 |

| Table 18. Degree of Diffici | ulty |
|-----------------------------|------|
|-----------------------------|------|

Based on the table 16, it can be seen that for instruments categorized as difficult as many as 80 questions, 210 questions including the medium category and 90 questions categorized easily. This suggests that the overall sample is able to understand and fill every question properly.

#### 3.22. Index of Discrimination

Based on the results of testing to 100 elementary students obtained the degree of difficulty of instruments as follows.

| No | Aspek                           | Upper Class | Lower Class |
|----|---------------------------------|-------------|-------------|
| 1  | General Intellectual Ability    | 22.9        | 17.6        |
| 2  | Specific academic aptitude      | 21.4        | 15.4        |
| 3  | Creative or productive thinking | 20.1        | 14.7        |
| 4  | Leadership ability              | 20.4        | 15.1        |
| 5  | Visual and performance arts     | 21.2        | 13.7        |
| 6  | Kinesthetic Ability             | 20.7        | 12.6        |

Table 19. Degree of Difficulty

#### 4. Conclusion

Test the potential for children smart and talented that researchers develop is as the prefix to chase the potential candidates who owned by children. There are six potential options listed in the test sheet potential sons, the general intellectual ability, specific academic aptitude, creative or another clear lesson thinking, leadership ability, visual and performance arts and psychomotor ability. Test the potential of researchers develop is expected to catches accurately the potential of children and smart talented, not only the heft alone but there is the talent of the talent found through testing of smartphone and talented.

By doing some test, then t es potential son of smartphone and talented that researchers develop can be said to be suitable for the appliance to perform excavations potential son of smartphone and talented so that it can be done the adjustment program that was adopted for children smart and talented in the classroom inclusive settings. The use of the potential test son of smartphone and talented this will make it easier for the teachers in the map the ability of students and smart and talented in developing the material and appropriate learning methods. And the treatment of special treatment that may be given to some students

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