CHAPTER I
INTRODUCTION

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CHAPTER I
INTRODUCTION

1.1 PREFACE

In education it was accepted that good educational administration should consider the difference between individuals, because of the fact that each student is different in mental ability or intelligence. According to Baron "The nature of each student is different in physical and mental because individual's study ability were different". Therefore intelligence is a very important factor in education. So that if the teachers know their students' intelligence, they can understand and manage experiences and accordingly support them to learn according to their intelligence and abilities. It is very useful in education and for national development.

Researches about intelligence the psychologists and educators have studied for a long time. The concepts of intelligence were concluded as follows:

1. Intelligence as a general intellectual capacity.
2. Intelligence as adaptability.
3. Intelligence as learning ability.
4. Intelligence as a group of trait.
5. Intelligence as what ever an intelligence test measures.

There are several methods to know IQ. The popular method to measure is intelligence test. Tonghao said, "The intellectual measurement is to measure capacity in different ways. The different tests could measure

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intelligence differently.\textsuperscript{3} The intelligence tests are used for grouping students' abilities on IQ. Therefore, intelligence tests could be used in research survey. The intelligence tests have good value for schools and are used widely. Now a days, intelligence tests are necessary because they help the teachers to evaluate their students.

Intelligence tests were more used in schools in developed countries but schools in Thailand they are not mostly using the intelligence test. Now intelligence tests are used in Thailand that are developed in foreign countries. These tests may not be suitable for Thai students because of language and culture affect and so they are not suitable. The construction of intelligence tests for any country should consider the basis of language, social and culture of that country. In this study the investigators' purpose was to construct intelligence group test, with modification of Otis-Lennon Mental Ability Test (OLMAT) and Flanagan's Test of General Ability Test (TOGA). This test is an intelligence group test, which is verbal and non-verbal test for students' having age group 14-17 years. It is useful for grouping, classification and for organizing activity for teachers to teach.

Otis-Lennon Mental Ability Test (OLMAT) and Flanagan's Test of General Ability Test (TOGA) are group intelligence test, OLMAT is a verbal test the content of which measures intelligence. There are three factors viz. (1) Verbal Factor (2) Numerical Factor and (3) Reasoning Factor. The TOGA is non-verbal test, which consist figures that measure intelligence. The two abilities are (1) Information Ability and (2) Reasoning Ability. For this study investigator has used the principles of the verbal test of OLMAT and non-verbal test of TOGA which is suitable for Thai students.

1.2 IMPORTANCE OF THE STUDY

Intelligence tests are constructed to test person's capacity, which are reliable to know the achievement of learning or work in the future. We believe that each person is different, so are their capacities. In developed countries, such as USA. IQ Tests are used for testing intelligence. Every student has their own intelligence record, to know his or her abilities. This is also convenient for teachers to develop students according to their educational objective. The advantages of the intelligence test are as follows:

1.) Selection of an individual: Such as entrance for schools or selecting for work. Testing is very necessary because there are more persons than schools or workplace can accept. So that, intellectual testing is very useful to manage students for suitable curriculum or the right man in the right job.

2.) Classification of students: For knowing the different students, the teachers can group according to their capacities and provide suitable learning. Thus it can help students for achievement in education.

3.) Diagnosis of abilities: It is a useful tool for students' achievement or failure in learning. Teachers would use the findings to help other students.

4.) Forecasting the achievement: intelligence test would be used as tools to predict the probability of which their subjects can progress.

5.) Selection of a subject: It advantages for teachers to advise their student which subject would be suitable for him.

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6.) It would help the teachers and parents to understand their students well.

7.) Research purpose: Student's intelligence ability in each age is interesting and useful in education. The knowledge of student's IQ. in each age, area are very useful for educational development. So good and useful intelligence test is a need in research and to analyze consistently.

To study, the intelligence test is very important in the education to decide the students to have reliable information for taking decisions and to divide and grouping students for program study. Thus the intelligence tests are important for educators.

1.3 STATEMENT OF THE PROBLEM & CLARIFICATION OF IMPORTANT TERMS.

1.3.1 Statement of the Problem

The problem under study is:

"Construction and Standardization of Verbal and Non-Verbal group test of Intelligence for Southern Thai students belonging to age-group 14-17".

In order to avoid the confusion and misunderstanding about the terms involved in the statement of the problem, it is essential for the investigator to clarify the terms involved in the statement of the problem. They are as follows:

1.) Construction
2.) Standardization
3.) Intelligence
4.) Verbal
5.) Non-Verbal
6.) Group Test
1.3.2 Clarification of the Important Terms

(a.) Construction

Construction means to construct the items for the test. It is revealed from the history of the development of tests of intelligence, that most of the tests are adapted from foreign tests rather than constructed as original tests.

The present study, investigator has accepted the concept of intelligence given by (1) A.S. Otis and R.T. Lennon, and (2) J.C. Flanagan. Otis and Lennon have developed Otis-Lennon Mental Ability Test (OLMAT) for Grade IV–XII, which are verbal tests. Flanagan has developed Test of General Ability (TOGA) from K.G.–XII, which are non-verbal tests. For this Intelligent Test, the construction of items is based on OLMAT and TOGA principle. Hence for the present test the term "construction" means to construct the original test items on the principles involved in OLMAT and TOGA.

(b.) Standardization

This is a statistical term and it implies that the same content (items) be presented to each test taker and that there should be rules specified for administering and scoring the test. This include fixation of the norms, its reliability and validity.

(c.) Intelligence

This is an abstract concept. Different psychologists have interpreted it differently. Hence with a view to clarifying the concept, whole chapter II is devoted. However, the concept adopted by Otis-Lennon for
OLMAT and Flanagan for TOGA have been accepted in toto for the present verbal and non-verbal test. For operational research measure the students' intelligence about comprehension, reasoning, number, information (culture-fair) and reasoning (culture-free).

(d.) **Southern Thai**

Thailand is one of the country in South-East Asia which has six parts i.e. (1) Northern Part (2) Eastern Part (3) Northern-East Part (4) Western Part (5) Middle part and (6) Southern Part. The Southern part of Thailand has fourteen provinces with about thirteen millions of people and Thai as a national language. Most of the culture and traditions are like the other parts of Thailand. In this study Southern Thai means students studying in fourteen provinces of Southern part of Thailand.

(e.) **Students**

Generally student means who are studying from K.G.-XII both in government schools and private schools in 2001-2002. In Thailand there are three levels in educational system, which are having six plus three plus three (6+3+3) pattern. The first level is from Grade I to VI, known as primary schools in which pupils learn for six years. The second level from Grade VII to IX, known as secondary schools, in which students learn for three years. The third level is higher secondary schools, which include Grade X to XII, they give education for three years. After that, the students who complete higher secondary schools will go to universities. Thai children usually take admission at the age of six in Grade I of primary schools.

So accordingly average age of Thai students who take education in each grade are:
<table>
<thead>
<tr>
<th>Age</th>
<th>Grade</th>
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<tbody>
<tr>
<td>5 or less years old</td>
<td>K.G</td>
</tr>
<tr>
<td>6 years</td>
<td>I</td>
</tr>
<tr>
<td>7 &quot;</td>
<td>II</td>
</tr>
<tr>
<td>8 &quot;</td>
<td>III</td>
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<tr>
<td>14 &quot;</td>
<td>IX</td>
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<td>15 &quot;</td>
<td>X</td>
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<tr>
<td>16 &quot;</td>
<td>XI</td>
</tr>
<tr>
<td>17 &quot;</td>
<td>XII</td>
</tr>
<tr>
<td>18 or more</td>
<td>University</td>
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However, in the present study students means who are studying in Grade X to XII in academic year 2001-2002.

(f.) Age-Group 14-17

Age group 14-17 means the average age of students who are studying in higher secondary schools. From surveying by Thai Education Ministry in 2000 they found that the average age of Thai students are between 14 to 17 which are studying in higher secondary schools i.e. in Grade X to XII. Some student who learns early, they may be 13 years old and some late admitted may be 18 years old. So, in the present study students means who are studying in higher secondary schools whose age are:
(g.) **Verbal Test**

Verbal test is a type of test, which include statements and words. It is mostly a paper and pencil variety. The students must be literate and they have understanding the language so that they can read and write a test. In this type of test, students use words in attaching meaning or responding test items. Tests involving comprehension; vocabularies and mathematics are of that type.

(h.) **Non-Verbal Test**

It is mostly a paper and pencil variety. In this type of test, students do not use words in attaching meaning or responding to test items. Tests involving the use of solely numbers, or graphical representations, or of figures and pictures or material are of this type.

(i.) **Group Test**

Group tests can be administered to more than one individual at a time and usually can be administered simultaneously to any suitable size of group.
1.4 THE OBJECTIVES OF THE STUDY

The objectives in this study are as follows:

1.) To construct and standardize group test of intelligence for the students of Grade X to XII of the higher secondary schools of age group 14-17, of Southern part of Thailand.
2.) To study the sex differences with reference to their intelligence.
3.) To study the age differences with reference to their intelligence.
4.) To study the grade differences with reference to their intelligence.
5.) To study the area differences with reference to their intelligence.

1.5 THE SCOPE OF THE STUDY

Thus, there is a scope and utility for the test of intelligence, verbal and non-verbal in form with the test content based on culture-free abstract and culture-fair information items from different environment of Thai home, community, nature & recreation and basic & social sciences.

The present test, with some of features mentioned above, will have vast scope in the field of measurement of intelligence in Southern part of Thailand. The scope such an Intelligence Test has earned more weightage with the advent of six plus three plus three (6+3+3) pattern in Thailand.

The teachers, administrators, guidance and counselling officers and parents might find it very useful. The test can help them in measuring potential ability of the students to learn. It would prove to be a sparkling ray for diagnosing students, with good intelligence but showing poor educational achievement, only if their basic potential to learn is estimated. Hence there would be a scope for all interested to employ various methods to substantiate the potential.
The scope of the application of the tests covers teachers, parents, counselors and researchers. This will enable them to measure the potential.

1.6 VARIABLES OF THE STUDY

Variables of the present study were as under:

1) Independent variables

(a) Sex

1) Boys
2) Girls

(b) Age

1) 14 years
2) 15 years
3) 16 years
4) 17 years

(c) Grade

1) Grade X
2) Grade XI
3) Grade XII

(d) Area of schools

1) Urban
2) Rural

2) Dependent variable

The scores on intelligence test.
1.7 HYPOTHESES OF THE STUDY

The hypotheses of the study are as follows:

1.) There is no significant difference in the mean score of the students belonging to different groups of sex.
2.) There is no significant difference in the mean score of the students belonging to different groups of age.
3.) There is no significant difference in the mean score of the students belonging to different groups of grade.
4.) There is no significant difference in the mean score of the students belonging to different groups of area of schools.

1.8 DELIMITATIONS OF THE STUDY

The test, even with wide scope has certain limitations too. They are as follows:

1.) It is limited to Thai students who can speak and read Thai language.
2.) It is limited to students of Grade X to XII.
3.) Its norms are based on the population of Southern part of Thailand.
4.) The students with poor-vision, poor hearing or inadequate eye-hand co-ordination will be handicapped in giving this test.

With the wide scope, specified objectives and limitations, the investigator decided to construct and standardize verbal and non-verbal intelligence test.

1.9 SCHEME OF CHAPTERIZATION

For devising a highly reliable and valid tool, a care should be taken right from planning to the end of standardization. As far as procedure is concerned, it resembles more or less similar to most tests of mental
measurement. This, being verbal and non-verbal group test of intelligence for Grade X to XII, the ability and type of items, which are to be included in the test must be determined in the first instance. For this, ability components incorporated in various sub-tests of verbal and non-verbal tests developed in Thailand and abroad were to be studied.

The entire work of construction and standardization of intelligence test has been reported in the chapterizations like:

The first chapter concerned to the introduction which was already reported.

The second chapter deals with the theoretical orientation. The details of the theoretical orientation concerned the definitions, classifications and traits of intelligence.

The third chapter deals with the review of work done in mental testing. It real speaking presents a few studies on intelligence test that were done in foreign countries and Thailand.

The fourth chapter describes the plan and procedure which include the design of development of intelligence test. It describes to decide the types and component of the present test.

The fifth chapter describes the development of the test. The experimental try-out, pre-pilot test and pilot test, the full description of the procedure and criteria for selecting the items for the final form of the test have also been discussed in detail.

The sixth chapter describes about the norms of the present test. The method adopted to establish the reliability and validity of the intelligence test is presented.
The seventh chapter deals with the studies on the basis of the correlated study, which include correlation of scores of intelligence of the sample with sex, age, grade and area.

The last chapter describes the review, observations, major findings and discussion. In this chapter, the attempt is made to give suggestions for further research in the field of intelligence test.