Analyze and Compare of the Intelligence of Students Accepted in Model Schools with Public School Students

Yaser Rahmani[1,2]
[1]Department of Computer, East Azarbaijan Science and Research Branch, Islamic Azad University, Tabriz, Iran

[2]Department of Computer, Tabriz Branch, Islamic Azad University, Tabriz, Iran

Ahmad Habibizad Navin[*1,2]
[1]Department of Computer, East Azarbaijan Science and Research Branch, Islamic Azad University, Tabriz, Iran

[2]Department of Computer, Tabriz Branch, Islamic Azad University, Tabriz, Iran
manhabibi@yahoo.com

ABSTRACT

Intelligence Quotient (IQ) is a ratio obtained by dividing the mental age over chronological age. There are several methods to get mental age and usually professionals use certain tests. IQ tests are used to determine the level of IQ. There are several methods for testing and measuring the intelligence rate and intelligent behavior of children. Comprehensive digital system was designed by Yasir Rehman and Ahmad Habibi zad Novin in 2016 for testing and measuring the intelligent behavior in children based on the Wechsler Intelligence theory. In this paper, we are going to compare IQ rate of students in model schools with those in public schools using comprehensive digital system designed based on the Wechsler Intelligence theory.

Keywords

Intelligence quotient, Intelligence test, Wechsler's intelligence theory, Comprehensive digital system finite

1. INTRODUCTION

Checking the past shows that men have been always trying to know others so that they can correspond to their actions with them, but it was not scientific. Over time and with the development of human, family, and community needs, methods to measure abilities such as intellectual abilities and behaviors are spread faster and gain scientific aspect [1]. The first effective steps to make measurement tools occur in the laboratory of Wilhelm Maximilian Wundt. It can be said that the efforts to correctly measure phenomena are the establishment of appropriate techniques for the analysis of reactions, preparation of norms, and use of mathematics to interpret the results; the necessary steps to prepare the tests were for the first time in the laboratory of Wundt [2].

The actual preparation of tests started in 1905 by Alfred Binet and Theodor Simon. They provided a number of questions with increasing difficulty degree and gave them to different age groups, to estimate children's ability. The questions that were known as scale of intelligence measurement were revised again in the years 1908 and 1911. The last revision gave way to most countries. In America, Professor Terman, at the University of Stanford, standardized Binet test with the necessary changes for the American community and named it Stanford-Binet test [1].

There are several ways to measure children intelligence and intelligent behavior. In this paper we use the comprehensive digital system based on the Wechsler intelligence theory to compare students accepted in model school and public school students IQ.

In section 2, we define tests of children intelligence and method of they. In section 3, we will introduce a comprehensive digital system based on Wechsler's intelligence theory. In section 4, with the definition of system in section 3, will do testing on 20 childes at government private school and public school, therefore compare the resulting. Finally, section 5 is contain conclusion.

2. THE STUDY OF TEST AND ASSESSMENT METHODS OF CHILDREN'S INTELLIGENCE

There are different theories and methods to test and measure the intelligence of children including Kohs cubes test, Thorndike intelligence test, Porteus labyrinthine routes, Goodenough dummy test, Wechsler's Intelligence Scale, Raven intelligence test, etc; a certain number of these methods are discussed here.

2.1 Kohs Cubes test

Kohs cubes test measures practical intelligence in children 5 to 15 years old. Cubes test was produced in 1920 by Mr. Kohs; it is a solution to reduce the failure in verbal tests, when used alone. This test is of practical tests made to avoid interference of language in the measurement of intelligence. In this test, different shapes with different colors are printed on cards; the test taker must make the shapes using cubes. To make each shape, a definite time period is set to make the desired shape using cubes. Based on the time period of creating the shapes, the scores will be different. In the end, all scores obtained from each of the shapes are added and IQ is achieved with the use of chronological age and mental age [3].

2.2 Dummy Goodenough test

Folrenses Goodenough developed this test, in which the kid is asked to draw a picture of a man. In the Goodenough dummy test, time is not considered; using a pencil, a kid only draws a picture of a person on paper. After completing the drawing, in scoring, only the present components are considered, not the beauty of the drawing; the flexibility is considered as well. In this test, it is important that the components are fully and clearly drawn. For example, if the finger is not included in drawing the hand, the test is scored lower. And if the fingers are completely drawn, more scores are given to the test taker. The obtained score is converted to an IQ value via a table, mental age, and Ms. Stern's method. The test is common and does not depend on cultural factors. Goodenough's test has been adapted to many languages and most cultures. Drawing is a good way to study children's intelligence, and usually good students are among good drawing students; however, the drawing test cannot be accounted as a full IQ scale. This test is a tool that is added to the traditional tests [4].

2.3 Wechsler intelligence scale

Wechsler David in the 1930s began studying a number of standard tests. To make his initial scale set, he selected 11 subtests. A number of his subtests were taken from different parts of the 1937-Stanford-Binet revised test. The rest of the subtests were obtained from the group exams of the army, design of Kohs's cubes, alpha military test, beta military test, test of completion of Haley Pictures, and Pinter-Patterson test. These subtests were combined and published in 1939 as Wechsler-Bellevue Intelligence Scale [5, 6]. The initial scale of Wechsler-Bellevue was built for adults including two parts: verbal scale and performance measure; in addition to separate scores, they had a score of Intelligence Quotient. But, in 1949, Wechsler formulated Wechsler's Intelligence Scale for children so that with this test, the intelligence of children of older than 5 years were measured the same way as adults [5, 6, 7].

2.4 Emotional intelligence questionnaire (Managerial)

The test was introduced in 1996 by Golman. This test indicates the intelligence rate to sense the emotions of others and the ability or to continue friendship relationships with others, accredited by the British Psychological Society. It has 69 steps; usually between 15 to 30 minutes is intended to do the test. The test is verbal, and during the test stages, the questions are asked as in a questionnaire. Based on the responses, the intelligence rate is measured at the end. Emotional intelligence test contains seven separate parts [8]. The seven elements are briefly described in this section.

- Awareness: the ability to understand and manage and control our own feelings, and to believe, manage, and control oneself in a working environment.

- Flexibility: ability to hang on and adapt oneself to the conditions and pressures.

- Individual intelligence: the ability to be aware of the needs and expectations of others to solve the problems.

- Influence: the ability to persuade others by knowing and understanding the needs.

- Certainty intuition: the ability to reach a clear conclusion on the basis of vague and incomplete information.

- Conscience: the ability to encourage others to deal with problems and choose the correct path.

- Motives: the desire and passion to get the right results and the impact upon it.

2.5 Trait of emotional intelligence questionnaire

The test was published in2013 by Dr. Petrides, child psychologist and member of teaching psychology association. It is a method for multi-purpose measurement and evaluation of emotional intelligence. It is a verbal test and, during the test, questions are asked as in a questionnaire; at the end, intelligence is measured based on the responses. It includes 153 steps based on seven planned stages. The test can be performed on paper or online, as online, is more practical. This application contains all of the life and work management, talent, leadership trait, measurement of the power to choose, team creation, and so on. It is accredited by

the British Psychological Society [9]. The whole score is a function of general intelligence based on four main factors that will be discussed in this section briefly.

- Welfare: The amount of happiness and the amount of which a person is positive.

- Self-control: how much a person can take control his stress?

- Excitement: The capacity to understand, express emotions, maintain, and keep a friendship relationship with others in the community.

- Social: social skills of a person, that is, how could they communicate with others?

3. INTRODUCE A COMPREHENSIVE DIGITAL SYSTEM BASED ON WECHSLER'S INTELLIGENCE THEORY

In this section, we define digital comprehensive system to test and assess the intelligently behaviors of from 6 to 12 years old children based on the Wechsler Intelligence Theory. For the first time, Rahmani et al. [10] have designed this system. In this system, using of verbal and nonverbal testing, we can understand level child IQ. This system will be digital and it's easy to show child's IQ.

In the system, there are three tests parameters of mental tester and test takers' administrator. Each of these factors in the system carries out special operations. The test taker shall have the possibility to register in the system, to log in and start doing the test; the results of previous tests must be provided for the test taker. The mental tester should be able to log in and edit specifications of the test and the test taker information. Mental tester, by selecting the test, should inform the test taker which test to perform; in some cases, the mental tester must be involved in test scoring; to see the results of tests carried out; provide reports of tests and test takers and send the results of the test takers to the administrator. Only the administrator can log in the system and view the results of his test taker. Apart from the Use Case, the mental tester and the test taker interact in the proposed system, and the test taker uses the mental tester guidelines. In the system, there is the possibility of registration of the test taker data and the tests, automatically calculating the scores, and display of scores of each test [10].

In Figure 1, general Use Case Diagram of the proposed system is displayed.
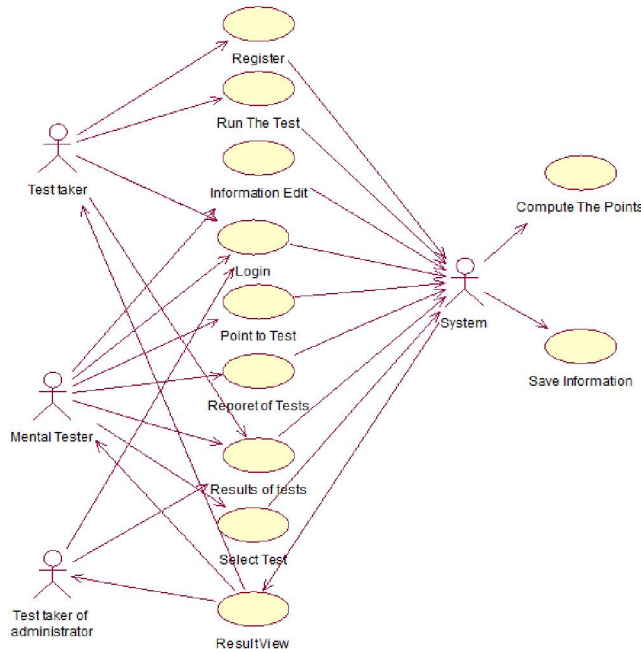
Figure 1. General use case diagram [10]

In Figure 2, Sequential Diagram of registration processes in the system, system log in, administration of tests, saving the test results, and sending the results to the test administrator are shown.
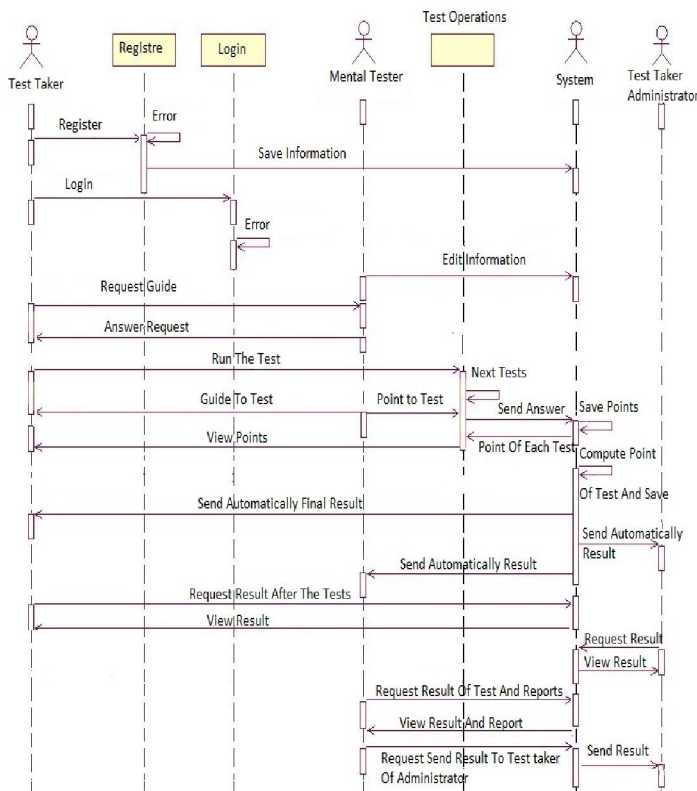

Figure 2. Sequential diagram [10]

In Figure 3, the user entry page is shown as an example of the system implementation. Users can select tests and view the scores of each test stage.
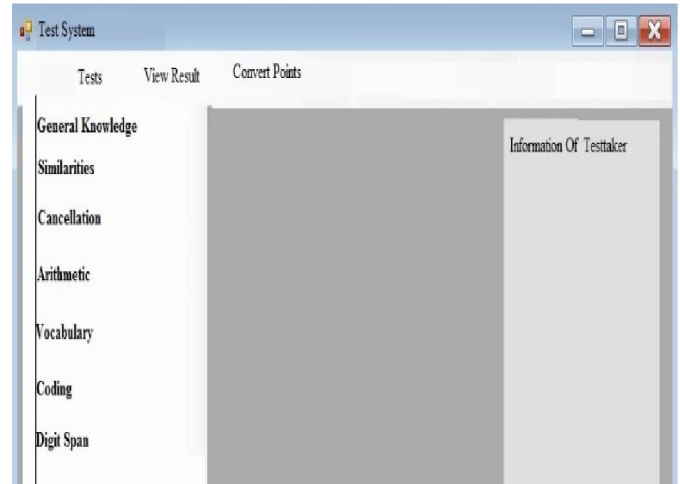

Figure 3. The test run page [10]

4. TEST IMPLEMENTATION

Now, with the using of this system, we do IQ testing over on 40 children's. 20 child's at students accepted in model school and 20 child's at public school. Figure 4, shows IQ at child's of public school.
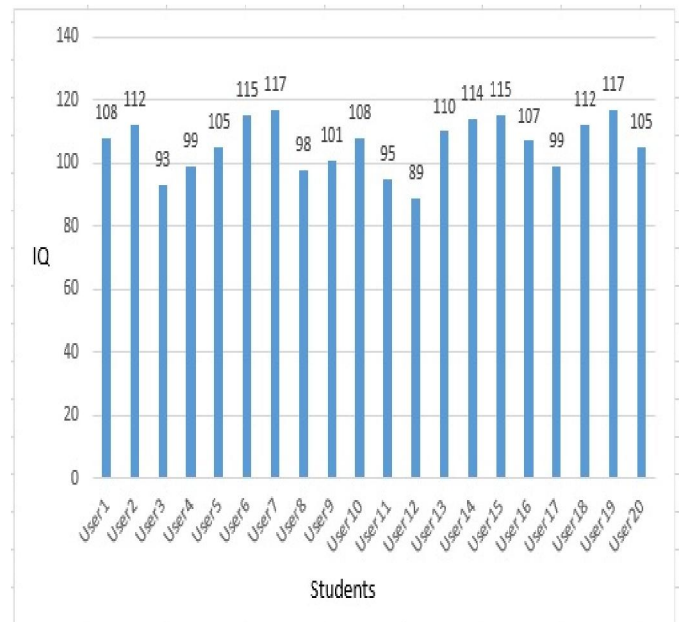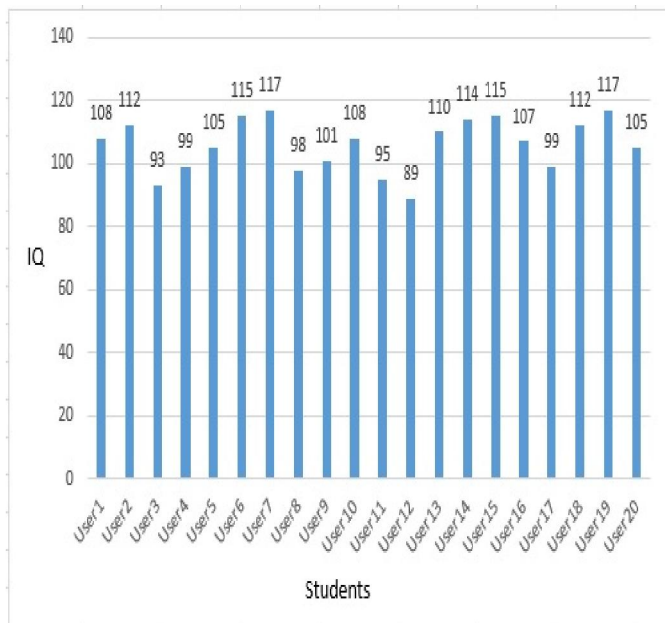

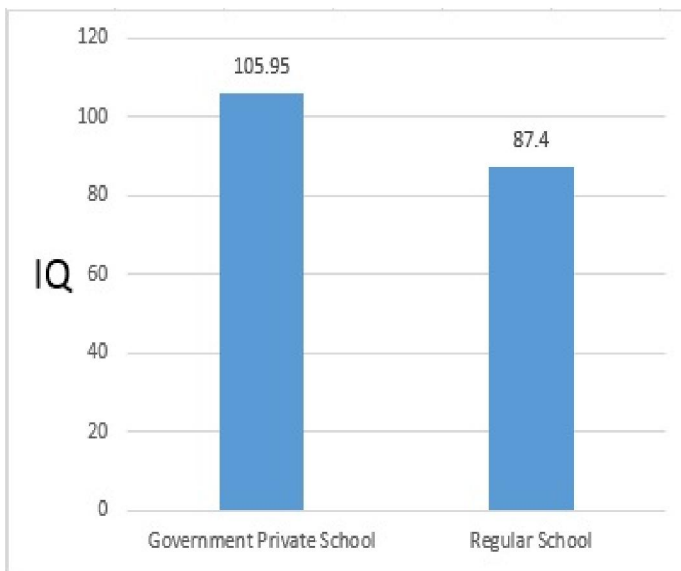**Figure 4. IQ at 20 childes of public school**

Figure 5, shows IQ at child's of students accepted in model school.

Figure 5. IQ at 20 childes of students accepted in model school

Figure 6, show the average of child's IQ at public and students accepted in model school.

Figure 6. Compare the Average of Child's IQ at Public and Students Accepted in Model School

In Figure 6, we can see the fact that child's at students accepted in model school have a higher IQ compare with child's at public school, also every one of child's IQ at students accepted in model school more than average of child's IQ at public school. Also every one of child's IQ at public school less than average of child's IQ at students accepted in model school.

5. CONCLUSION

In this paper the problem was compare IQ at public school and students accepted in model school. Using the digital comprehensive system to test and assess the intelligently behaviors of from 6 to 12 years old children based on the Wechsler Intelligence Theory we had done testing. We done IQ testing over on 40 children's which 20 child's was at students accepted in model school and 20 child's was at public school. Average of IQ at childes of public school was 87.4 but childes of students accepted in model school was 105.95. Aaccording to results, childes of IQ at students accepted in model school more than childes of IQ at public school.

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