DEVELOPMENT AND USE OF MOBILE APPLICATIONS THAT DEVELOP STUDENTS' INTELLECTUAL ABILITIES

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Abstract. *This article presents various puzzles, tests, and suggestions and recommendations for using them to determine students' intellectual abilities. A mobile application has been created in the Uzbek language that determines the level of intellectual abilities.*

Keywords: *intellectual ability, solution algorithm, test tasks, intellectual, logical thinking, logical solution.*

Introduction. test - a set of psychological tests designed to measure the level of intelligence or intellect. The origin and development of the IQ test are connected with several important historical events and studies. IQ tests were developed in France in the early 1900s by psychologist Alfred Binet. Binet, commissioned by the French government, developed rules for assessing students' readiness for education. After developing his test, he introduced the term "intellectual age" to measure the level of intelligence in a theoretical problem. Developed by Binet and his colleague Theodore Simon, the tests were refined in 1916 by Stanford University professors Lewis Terman and became known as the Stanford-Binet test. This test became widely used in the USA and allowed for the calculation of IQ[1-2]. To determine the intellectual abilities of students, research on the problems of applying teaching technologies for solving various problems of logical thinking and logical solutions was conducted by such scientists as B.M. Teplova, N.S. Leytes, V.N. Druzhinin, A.V. Petrovsky, A. Matyushkin [1-3].

Also, the formation of intellectual abilities of students of higher educational institutions, the development of their knowledge through logical solutions, the formation of professional competencies, and the development of creative intelligence in practice were studied by such scientists as A.M. Matyushkin, A.V. Petrovsky, M.G. Yaroshevsky, V.N. Druzhinin, D. Wechsler, G. Eysenck, L. Termen, R. Stenberg [4-9].

According to our research results, the article is aimed at implementing test tasks to determine the level of intellectual abilities based on international methods and creating a mobile application in the Uzbek language.

A mobile application has been created that develops students' intellectual abilities. This mobile application in the Uzbek language is written in the Android Studio Kotlin programming language.

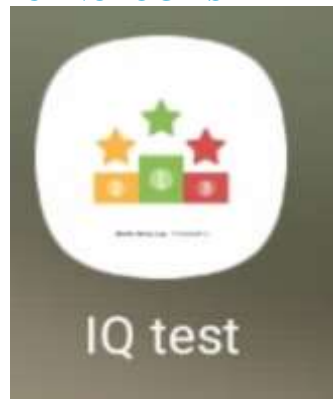Mobile app logo (Figure 1) and app test window (Figure 2):

Figure 1. Mobile app logo.   Figure 2. Test window of the application.

Below are examples of tests included in the mobile application and methods for solving them.

Example 1. According to the law, find the number instead of the? sign?

$5\rightarrow8=53, 2\rightarrow5=29, 9\rightarrow2=29, 7\rightarrow4=?$

Algorithm for solving: When solving such problems (+; -; x; ÷) are used.

For example: 5·8=40, let's think, to get 53, we need to add 13. How do we get 13?

It is necessary to find such a regularity that $5 \rightarrow 8$ gives 53. So, according to our pattern, we multiply 5 by 8 and then add 5 and 8 to it again (5·8) + (5+8) =53 The pattern is found through the sum of the product of a given number and a given number. $(4 \cdot 5) + (4 + 5) = 29$, $(9 \cdot 2) + (9 + 2) = 29$, $(7 \cdot 4) + (7 + 4) = 39$ Javob: 39

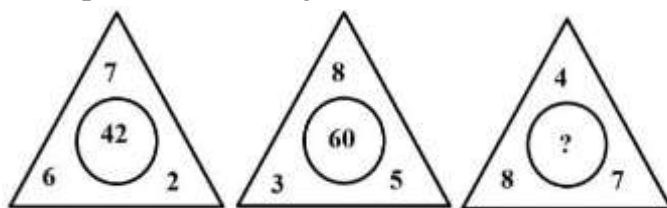Example 2. According to the law, find the number in place of the? sign (Fig. 3).

Figure 3.

Solution algorithm: According to this, when multiplying 6 by 7, the result is 42, but we have 2 extra. Let's multiply everything. 6·7·2=84 were obtained. The result of dividing 84 by 2 is 42.

1) $6 \cdot 7 \cdot 2 = 84$

2) $84 \div 2 = 42$

The rule is to multiply the given numbers and divide the product by 2.

In the 1st triangle:1) $6 \cdot 7 \cdot 2 = 84$ 2) $84 \div 2 = 42$

In the 2nd triangle: 1) $8 \cdot 3 \cdot 5 = 120$ 2) $120 \div 2 = 60$

In the 3rd triangle: 1) $8 \cdot 4 \cdot 7 = 224$ 2)$224 \div 2 = 112$

Answer: 112

In the variants of test tasks used to determine students' intellectual abilities (IQ), they are gradually improved and become more complex, and serve to increase the speed of the student's thinking ability[7].

Conclusion. The use of the mobile application algorithmically forms the level of students' intellectual abilities (IQ), strengthens memory, assesses the level of IQ and diagnoses its structural components. It can also be used by users aged 7 to 70, students of general secondary schools, students of higher educational institutions, and others.

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