

Testing the General Intelligence of Young Students Studying English

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Abstract: Intelligence has been studied over the years by various pedagogues, psychologists and even researchers, each providing a definition of this. However, we find in most definitions some common elements, namely the references made to: capacity, ability, skills or even activity. The novelty of this study consists in testing the intelligence of six years old students in order to develop the linguistic intelligence by studying English as a foreign language.

Keywords: intelligence, research, participants, variable.

Introduction:

Human society has been always facing parents and teachers with new challenges in terms of the child's overall development. While in the drafting of public policies in the field of child development we consider the child as the most important landmark and investing in this age group as the most effective thing to do, then through their implementation tools, public policies should refer to the orientation, coordination and convergence of all activities carried out by adults, based on a common vision.

In contemporary psychology, the number of definitions developed for the intelligence term is large, with no unanimous consensus either on the delimitation of the content or on its functions. Thus, Woolfolk A. [20] emphasized that 24 expert psychologists offered as many points of view regarding intelligence; moreover, some believe that intelligence does not even exist as a real entity, being only a label for what intelligence tests measure [13].

The history of intelligence research begins with the Latin origin of the word *intelligere*, which means to relate, to organize or from *interlegere*, which implies either the establishment of relationships between people, or intelligence: "the ability to understand easily and well, to notice what is essential, to solve new situations based on previously accumulated experience" [5].

The problem of intelligence is studied by various researchers, in the context of different sciences: philosophy, biology, psychology, pedagogy medicine. Among the ideas formulated throughout history, the French philosopher Descartes gave the closest definition to the modern understanding of intelligence. He defined intelligence as "the means of acquiring a perfect knowledge".

Based on the main topics of the research carried out in the field of cognitive development and language intelligence, we would like to mention the researchers that studied intelligence over the years: Binet A. and Thomson M. in 1905 [3], Terman L.M. in 1916 [16], Pinter R. in 1921 [12], Thorndike, E. in 1922 [17], Spearman C. in 1923 [14], Thurstone L.L. in 1938 [18], Wechsler D. in 1939 [19], Piaget J. in 1972 [11], Jensen S. in 1982 [10], Eysenck H.J. in 1986 [6], Sternberg R. in 2002 [15], Gardner H. in 2007 [7], Adams C. in 2021 [1].

American psychologists Terman, L and Thorndike, E differed over the definition of intelligence, Terman stressing the ability to think abstractly and Thorndike emphasizing learning and the ability to give good responses to questions.

Intelligence is defined as "being a general skill that contributes to the development of capacities and to the cognitive adaptation of the individual in new situations" [2]

Based on the main topics of the research carried out in the field of cognitive development and language intelligence, we would like to mention the following aspects:

- Piaget, J. - described how intelligence changes during ontogenetic evolution;
- Sternberg, R. - with the triarchic theory gives another alternative to intelligence. From his point of view, intelligence could be: analytic, practical and creative.
- Gardner, H searched deeper into the intelligences and came up with a new theory on multiple intelligences. According to his concept there are eight intelligences: visual-spatial, linguistic-verbal, logical-mathematical, body-kinesthetic, musical, interpersonal, intrapersonal and naturalistic [8].

Taking into account the definitions given during the time by scientists and researchers we can conclude that intelligence is best described as adaptation of the individual in new situations. Speaking about intelligence

as a complex system of operations that conditions the general way of approaching and solving the most diverse situations and problematic tasks, we have in mind operations and abilities such as: adaptation to new situations, deduction and generalization, correlation and integration into a whole unity of relatively disparate parts, the consequences and the anticipation of the outcome, the quick comparison of the action options and the retention of the optimal one, the correct and easy solving of some problems with increasing degrees of difficulty.

Materials and Methods:

The purpose of the research consists of theoretical- methodological substantiation, determining the level of general intelligence of the little students in order to develop the linguistic intelligence by studying English as a foreign language.

Research objectives: conceptual delimitation of the phenomenon of intelligence, choosing the target-group, creating the questionnaire, applying the questionnaire on the chosen group, analyses and interpretation of experimental data.

The participants in this research were represented by 105 students aged 6-7 years old, from Iași, Romania. The research took place over a period of about one semester. In order to meet the criteria of homogeneity and the correct choice of the target-group, the student subjects in this research come from both urban and rural environments, their nationality or ethnicity not being part of our area of interest. It is important to note that these students are in different classes and do not interact with the same teachers. The consent of the parents of the students to participate in this study was requested, they being minors, being explained, in that consent, both the tasks and activities included in the entire study, as well as the need to anonymous completion of questionnaires by students. The administration of the questionnaire was carried out by groups of students, each class being divided into two groups, the unit of time affected by the administration of the questionnaires being outside of class hours, 2 hours/week, for the duration of two weeks. The testing was oral, the subjects being assured of the confidentiality of the answers. From the 105 subjects participating in this research, differentiated according to the biological gender variable, 56 students are boys (53.3 %) and 49 students are girls (46.7 %). We present below the graphic illustration of the group of subjects, depending on the biological gender variable.

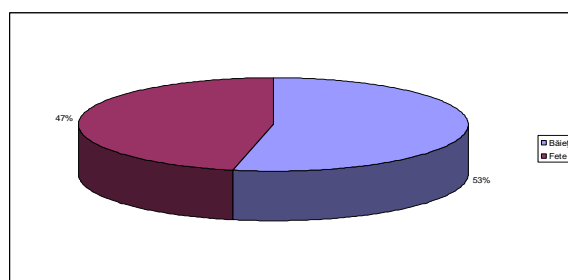


Figure 1 Subject group (biological gender variable)

After consulting the research literature, it was built a questionnaire designed to measure general intelligence of students. The questionnaire contains 13 items, the rating of the subjects' answers being made on a scale in 5-point Likert scale, from 1 = insufficient, 2 = sufficient, 3 = good, 4 = very good and 5 = excellent [2], [10].

The total score on the general intelligence test is obtained by adding the score of the subjects in case of each item and dividing the amount obtained by the number of items. Thus, the minimum score that can be obtained is 1 and the maximum score can be 5.

The processing of the data obtained was performed using the SPSS 20.0 software for Windows. The statistical operations used were:

- frequency analysis to illustrate the composition of the group of subjects;
- Cronbach's alpha internal consistency coefficient for the general intelligence test;
- t test for independent batches [9].

Results:

If we analyze the distribution of the results, a significant percentage of 49.5% of the total students obtained the "Very Good" qualification, and 16.2% of the total of 105 students reached the "Excellent" level. This distribution indicates that most students in the study group possess high general cognitive ability, demonstrating solid thinking, memorization, and reasoning skills.

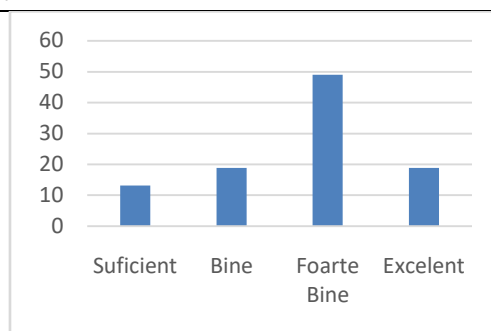


Figure 2 Percentage distribution of general intelligence according to the group of subjects

The preliminary understanding of the general competences of the studied students allows us to address how they interact and support the development of language and communication skills. The goal is to develop teaching methods that align harmoniously with general (complex, diverse) intelligence and at the same time can capitalize on and improve students' language skills. It is also important to know the student's intelligence profile in order to design the educational approach in optimal conditions, states the researcher Cantemir G. and Vovc M.[4]

Discussion:

The research aims to create games, interactive activities that involve teamwork, collaboration between students, conversation on different topics, the presentation of events and personal experiences. All this can contribute to developing the spirit of observation, memory, thinking and imagination of students. Thanks to the application of this research, each child will form communication skills, will accumulate knowledge about the environment, which will allow him to understand and make himself understood in various communication situations, specific to age and individual characteristics. In conclusion, the data obtained by the general intelligence questionnaire lay the foundation for a deeper and more nuanced investigation of linguistic intelligence in order to study English language.

In conclusion, the period of early schooling is fundamental in the development of the child's thinking, because the bases of the complex intellectual life are developed and important quantitative and qualitative transformations are produced in terms of knowledge processes, transformations that refer both to the organization of the system of knowledge and notions, as well as to the characteristics thinking operatives, a fact relevant to the development of intelligence

References:

- [1]. Adams, C. (2021). *The six secrets of intelligence*. Icon Books Ltd.
- [2]. Armstrong, T. (2011). *Eștimai inteligenței de câți crezi - un ghid al inteligențelor multiple, pentru copii*. București: Curtea Veche.
- [3]. Binet, A. (2015). *The Mind and the Brain*. Charleston: Createspace Independent Publishing Platform.
- [4]. Cantemir, G., Vovc, M. (2012). Aspecte ale valorificării inteligențelor multiple la ora de limbă literatură română. *Globodidactica Biannual Journal of Applied Linguistic*, Bălți. 3 (2), 25-42.
- [5]. Descartes, R. (2020). *Selected psychological writing*. Cambridge University Press.
- [6]. Eisenheck, H.J. (2006). *The structure and measurement of intelligence*. Routledge, England.
- [7]. Garner, H. (2002). *Inteligențe multiple - Noi perspective*. Curtea Veche.
- [8]. Gardner, H. (2021). *Minte sintetizatoare - Memoriile creatorului teoriei inteligențelor multiple*. Sigma.
- [9]. Moore, D. S., Notz, W. I., Flinger, M. A. (2022). *The basic practice of statistics (6th ed.)*. New York, NY: W. H. Freeman and Company.
- [10]. Nybord, H. (2003). *The scientific study of general intelligence: Tribute to Arthur R. Jensen. (1st ed.)*. Pergamon, Oxford.
- [11]. Piaget, J. (1972). Intellectual evolution from adolescence to adulthood. *Research article*. 15(1), 1-12.
- [12]. Pinter, R. (2023). Intelligence and its measurement. *Journal of Educational Psychology*, 12(3), 139-143.
- [13]. Smith, G.R., Nolen-Hoeksema, E.E, Fredrickson, S., Loftus B. (2014) *Introduction to Psychology*. Cengage Learning. (16th ed.).
- [14]. Spearman, C. (2022). General Intelligence- Objectively determined and measure. *The American Journal of Psychology*. 15 (2), 34-45.
- [15]. Sternberg, R. (2011). The triarhic theory of successful intelligence in contemporary intellectual assessment> theories, tests, issues. *The Guilford Press*, 103-119.

- [16]. Terman, L. M. (1912). *The measurement of intelligence: An explanation of and a complete guide for the use of the Stanford revision and extension of the Binet-Simon Intelligence Scale*. Boston: Houghton Mifflin.
- [17]. Thorndike, E.L. (2023). *The measurement of intelligence (classic reprint)*, Forgotten Books, London.
- [18]. Thurstone, L. L.(1938). *Primary mental abilities*. Psychometric Monographs.
- [19]. Wechsler, D. (1939). *The measurement of intelligence*. Baltimore: Williams & Wilkins.
- [20]. Woolfolk, A. E. (2001). *Educational Psychology*. Boston, Allyn and Bacon.