

Review of the methods and techniques of exploring schools with intellectual talent: the experience of Cuba and Peru

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Abstract

The detection, care and follow-up of children with a high intelligence or talent quotient are societies' most valuable resource. It is based on the systematization that is carried out in the theoretical order about school children with specifically intellectual talents, which is one of the most suggestive approaches based on the study of their potentialities and special educational needs. This research has as its essential purpose to approach a systematization of the main contributions and comparative studies from different contexts and historical moments, highlighting those provided by Cuban and Peruvian scholars in relation to the methods and techniques used for the detection of schoolchildren with high intellectual capacities.

Keywords: Schoolchildren, intellectual talent, comparative studies, methods, techniques.

Introduction

In the new century, it is urgent that education systems operate changes and transformations in their instructional and educational concepts, which guarantee participation and protagonist in public and productive life in the new society worldwide (Vergara, 2004).

Children with a high intelligence or talent coefficient are societies' most valuable resource, because they will be the future politicians and scientists, sportsmen, artists and authors; for which it will be necessary to give them the appropriate treatment. The concern for the development of talented children has been present since ancient times and at present, there is an international movement around it; where Cuba and Peru are not exempt as countries that are advancing in their growing development of science and technology.

This article allows us to approach a systematization of the main contributions and comparative studies from different contexts and historical moments, highlighting those provided by Cuban and Peruvian scholars in relation to the methods and techniques used for the detection of schoolchildren with high intellectual capacities.

Review in Cuba

The changes throughout history in the concept of talent have had a significant influence on the identification of its characteristics, methods and techniques to be used for the detection of talented children, since they are the most valuable resource of society, because they will be the future artists, authors, politicians and scientists and it is necessary to give them attention to develop their high capacities (Sternberg et al., 2010).

Renzulli and Reiss (1984; 1997) in their Triadic Model of School Enrichment, recommend collecting multilateral indications from subjects, which include: 1) psychometric information, 2) information on development (which includes the stages of early and preschool development, or at least, prior to the current stage), 3) sociometric

information, 4) information on the subjects' school and out-of-school performances, and 5) information on their motivations and interests, where the information collected by the various procedures selected should allow the student to be characterized integrally.

This model is one of the most suggestive approaches from the educational point of view. It is based on a non-restrictive selection of students, between 15 and 20% of the school population, who make up the so-called "talent group". These students receive training specific through a curriculum enrichment program. There are two fundamental criteria for the formation of the talent pool: the results of IQ and aptitude tests, as well as the nominations of teachers - elements that in Cuba are taken as a basis for the development of these children.

In Cuba, talent has been studied since ancient times (Salazar & Fernández, 2016), and the studies carried out by Castellanos since 1992 show that the eminent pedagogue Enrique José Varona (1848-1933) (Pedagogical School of the University of Havana) where he developed a strategy to deepen the possibilities of his students, giving education the role of a transforming agent of thought. The most recent Cuban studies on the subject provided contributions from different perspectives by authors such as Castellanos (1992; 1993; 2009), Castellanos and Grueiro, (1997; 2016), Castellanos and Córdova (1992), Lorenzo (2008), Leyva and Ortiz (2016).

According to Calzadilla and Ponce (2006, p. 365), talent "is a qualitatively superior psychological formation. It is the result of the functional integration of the intelligence and special capacities of man, with the development of strong interests in one or more areas to which he is deeply emotionally committed. The identification of the potentialities in students and their special educational needs require a flexibility of the diagnosis. Therefore, from the Cuban experience, the diagnosis is, therefore, a process directed to certain objectives and goals, which are linked in turn to the solution of real problems of professional practice, in this case, related to the confrontation of the diversity of the classroom.

The diagnostic process according to (Castellanos, 1997) has been conceived in terms of identifying potentialities, that is, as a process of knowledge of individuals, aimed at detecting and characterizing their potentialities and needs in certain areas with the objective of updating and enriching them, converting them into acting forces, into capacities and modes of functioning of high personal and social value. The main sources, areas and ways of information about the students with possible talent are based on the use of varied sources of information about the subject, being the sources of knowledge the subject himself, the family in general, and the people close to him, the friends and colleagues and the teachers and specialists who work with these students.

In Cuba, there are formal diagnostic modalities from which information is obtained from instruments that have been previously standardized, normalized, and validated for certain populations. Non-formal methods are other alternatives for diagnosis based on local procedures, developed by individuals and institutions in accordance with particular purposes. Information from parents and relatives, from peers and teachers, and from the subject himself can have a value from systematic observation, questionnaires and individual and group interviews, support instruments for the characterization of subjects such as: assessment scales, lists and inventories, sociometric techniques and dynamics of school grades and analysis of the academic record. Other ways may be through the performances and products of the activity (writings, compositions, drawings, projects and research works, artistic performances, etc.), autobiographies and other biographical documents, anecdotal records made by the teacher or parents and the judgments of experts in special areas (for example, in music, visual and dramatic arts, sports, etc.).

The techniques will be selected depending on the purposes of the diagnosis and according to these, different areas or information modules can be explored (Castellanos, 1997), such as, for example, the cognitive module, the motivational one, the environmental one (which includes the influence of the family, the community, the environment created by out-of-school friends, etc), the one of personological resources.

Carrying out functions directly related to the determination of a diagnosis implies a high level of preparation and understanding of this process in all its theoretical-methodological dimensions. This is why an essential element in Cuba is found in the work of the Centers for Diagnosis and Orientation (CDO), where the psychologist and psychometrist specifically work on the preparation for the psychological diagnosis as part of the psycho-pedagogical diagnosis of the schoolchild. In order to determine the children and schoolchildren with certain talents in Cuba, this team focuses on a group of instruments, techniques and tests which, when the diagnostic report is drawn up, make it possible to outline the educational and acceleration strategies for these children. Within the field of attention of the CDO teams, we cannot ignore the schoolchildren with talent because it constitutes a deviation in intellectual development that places them above the norm with an intelligence coefficient above 130. To this end, the compilation of methods and techniques for assessment in the CDOs compiled by Martínez, M., et al. (2003) and Mesa (2016) has been taken into account.

In addition, certain specific skills are important in cognitive development: verbal, numerical, artistic, etc. It is necessary to assess the child's intellectual abilities. General intelligence tests are the most traditional measures to assess them, among them we have The Wechsler



Figure 1. Importance of care for gifted and talented children and youth.

Intelligence Scale: WIPPSI, WISC, AND WISC-R. The fact that these tests offer a verbal intelligence coefficient (IQ) and a manipulative one serves to detect students with high mechanical or spatial ability, as well as those who excel in verbal skills.

The Raven's Progressive Matrices test in its different standard (SPM), colour matrix (CPM) and advanced (APM) forms measures a type of non-verbal reasoning with a high G-factor saturation or general intellectual functioning which has led some authors to consider it the best measure of intelligence. Productive and creative thinking should also be valued, since creativity constitutes for many authors one of the components of giftedness. There are few standardized tests to measure it, but the best known are Torrance's Creative Thinking Test and Khatena Torrance's Creative Perception Inventory. Searching in them: fluency, flexibility, elaboration and originality.

The processes of insight or intuition are one of the characteristic features of high-capacity people and it is the intuition to solve unconventional problems in an ingenious way. For its assessment, STAT is used, which evaluates insight through a set of different tasks of mathematical content, verbal, mystery letter series problems, etc., evaluating the three processes involved in insight: information coding, comparison and selective combination.

The curricular competence allows to obtain information about the degree of knowledge that the student shows in relation to the curricular proposal of the cycle and the learning style, referring to the strategies that he uses in front of the learning, since talented students have a wide knowledge of how their own cognitive processes work.

For the stimulation of verbal talent in Cuba, the case study is used as a fundamental method to analysis the process of stimulating verbal talent by monitoring, interpreting and evaluating the evidence of the transformations produced by the introduction of the pedagogical concept into educational practice.

To this end, the following methods and techniques are used: participant observation of teaching and extracurricular activities, surveys of schoolchildren, teachers and educational agents, document review (Schoolchild's Cumulative File, methodological work plans, normative documents, reports and memories of methodological work), psychological exploration and qualitative research techniques expressed in the diary, field notes and anecdotal records. In addition, reflection and critical opinion workshops are held with principals and teachers during the transformation stage of the case.

These constitute spaces to guide pedagogical actions for the stimulation of verbal talent and to evaluate the results in the concretion of the concept in practice. (Calzadilla & Ponce, 2016)

In Cuba, the diagnosis of schoolchildren with certain talents is based on the programmatic platform of the potential development area as the centre of the diagnosis. Human capacities exist as an active, present reality and as a possibility. It is essential that teachers set out to detect significant signs referring not only to current achievements, demonstrated by the subjects, but also to potential achievements, to their possibilities of development in one or another area according to their particularities as individuals.

The notion of "zone of close development" (Vigotsky, 1982) constitutes the core of a theoretical and methodological position with respect to diagnosis and intervention. It points out the difference between what the subject is able to do when working independently, and what he can achieve with help, with a certain support. It establishes

the measure of how efficiently the subject takes advantage of this help, and in general, the instruction, that is, the measure of its teachability.

Peruvian Review

Special education in Peru was established in 1971, within the organizational structure of the Ministry of Education. In addition, in 1983, the General Education Law 23384 was promulgated, where it is indicated:

"Special education is the modality designed for those persons who, because of their exceptional characteristics, require differentiated attention. It includes both those who suffer from mental or organic deficiencies or social behavior disorders and those who show outstanding conditions. The State encourages and supports special education" (Ministry of Education, 2003).

The gifted child is defined as "the child who is exceptional due to outstanding abilities that significantly exceed the average of normal intelligence" (Ministry of Education, 1983; Alencar & Blumen, 1993). In 2002, Peru defined among its educational policy guidelines the task of redefining and strengthening education as a fundamental process for the comprehensive training of children and adolescents.

The Special Education Unit of the Ministry of Education, which is responsible for raising awareness in the Peruvian community of the importance of caring for talented and gifted children and young people, has made it possible for the new Education Law 28044 (Ministry of Education, 2003; UNESCO (2004)) to establish the following:

In Peru, the methods of identification correspond to proposals suggested by the international scientific community investigating the subject (Tourón, 1998), and they can be grouped into three categories: psychometric, performance and behavioural.

a) Psychometric resources

Intelligence tests, with this information information can be collected about the skills that the child or adolescent has at a cognitive level, thus serving for decision making in conjunction with other assessment measures. In Peru, the following tests are generally applied: Stanford-Binet test of intelligence (Terman-Merrill. Form L-M), the Wechsler intelligence scale for children-reviewed (WISC-R), the Wechsler preschool and primary scale of intelligence (WPPSI), Raven progressive matrices: colored scale, and McCarthy scales of aptitudes and psychomotor skills for children (MSCA).

(b) Assessment of academic performance

In the first grades of regular education, the standards achieved in the basic courses are taken as a reference, such as integral communication and logical-mathematical thinking; in the higher grades, other knowledge is included. At this point, a pedagogical assessment focused on the achievement of knowledge they have developed becomes feasible.

c) Analysis of learning processes

The student's ability to learn and plan what to do and how to do it and actually do what they have learned and planned to do.

It is important to mention that the assessments require first of all an analysis of the intellectual capacity profile by section: the psycho-pedagogical department of the educational institution, this information is used to orient the tutors about the strengths and weaknesses of each child, so that they can better guide them through a personalized educational project (Torrance, 1965; Yuste, 1998).

In Peru, scientific research in the field of talent and giftedness is very poor. In the mid-1980s, the National Council for Science and Technology (CONCYTEC) carried out a program to detect and support gifted children in the city of Lima, involving 3,000 students in the study (National Council for Science and Technology, 1989), and promoted a development proposal for regionalization based on the detection of talented children and young people (Gonzales, 1991).

In 1997, a training workshop for teachers was organized to identify the needs and disadvantages of gifted and talented students. This study was carried out within the framework of the National Teacher Training Plan (PLANCAD) with the collaboration of the German Cooperation Agency for Education (GTZ) and the Pontifical Catholic University of Peru.

Blumen (2004) analyses empirical studies on multicultural populations and reflects on the impact of intervention programmes at the level of teacher training and cognitive/emotional enrichment developed in the region. Comparative studies also reflect the progress of research among gifted students in Ecuador and Peru, applying Ned Herrmann's test to determine the predominant quadrant in their learning. Students from Ecuador are more predominant in the right limbic (RL) and left limbic (LL) hemispheres. While students from Peru (Fajardo et al., 2019).

The development of talent and giftedness in Peru should seek to train teachers and encourage the development of these students, as far as possible, within their own classrooms, paying maximum attention to the process of identifying and assessing the educational needs of these more capable students and preparing the curricular proposal based on the needs detected and in accordance with the learning style of each one (Ministry of Education and Science, 1991; UNESCO, 2004; Blumen, 2006).

Conclusions

Based on these reflections, the idea is to use not only a static or standardized diagnosis through the instruments and tests mentioned above (which describes what a subject is capable of doing in the present, what knowledge, habits and skills are already acquired and consolidated, but a dynamic diagnosis (which provides information about what his future acquisitions may be, and consequently, the educational support he needs to be able to go further).

Based on the methods and techniques used, these children tend to be more precocious in memory than in general intelligence, reading performance or special reasoning. In terms of skills, they are very diverse, and the acquisition of advanced academic skills is not necessarily related to their intellectual level. So, children with advanced skills may have greater difficulty adapting and this may lead to uneven results in the areas of physical and social development. (Salazar & Fernandez, 2016)

In order to consider in Cuba, the initial exploratory detection of talented children in educational and research institutions of the Ministry of Education is carried out from an early age, through different methods, techniques and tests that allow reflection, the collection of evidence or tangible products for psycho-pedagogical evaluation, its subsequent diagnosis and educational strategy.

In Peru, progress in the education of talented students in the last ten years has been significant but insufficient. There have been greater awareness that talented and gifted students require a specific educational response to their teaching needs (Ministry of Education, 2013)

The systematic and comprehensive care of talented children in Peru should be one of the important goals in all educational management.

It is feasible to attend to the needs of the talented in the classroom, it is possible if there are well qualified and prepared teachers in the area of education of the talented. In this sense, monitoring is important in order to establish ongoing training activities for teachers (Blumen, 2006).

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