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Aims of teachers psychometry : intelligence testing in Barcelona (1920)

**Reference:**

Mülberger Anette, Balltandre Monica, Graus Andrea.- Aims of teachers psychometry : intelligence testing in Barcelona (1920)

Asclepio: archivo iberoamericano de historia de la medicina y antropología medica / Consejo Superior de Investigaciones Científicas. Instituto Arnaldo de Vilanova de Historia de la Medicina - ISSN 0210-4466 - 17:3(2014), p. 206-222

Full text (Publishers DOI): <http://dx.doi.org/doi:10.1037/a0033339>

**This article has been published in *History of Psychology*, 2014, volume 17, issue 3 (Aug), pages 206-222 (see <http://psycnet.apa.org/>)**

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## **AIMS OF TEACHERS’ PSYCHOMETRY: INTELLIGENCE TESTING IN BARCELONA (1920)**

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*“Poseídos por un deseo innato de experimentar...  
nos hemos lanzado por el peligroso camino de la Psicometría práctica”<sup>1</sup>*

### 1. INTRODUCTION

Students’ intelligence and its assessment is today still a relevant psychological issue in schools. Historians have rightly emphasized the key role played by instruments in modern science and society, without which psychological phenomena would not be viewed or dealt with the way they are. The story of how one kind of instrument, like the mental test, emerged and how it later led to systematic IQ testing in the United States is well known (see, for example, Fancher, 1985; Gould, 1981; Richardson & Johanningmeier, 1998; Rose, 1979; Sokal, 1990; Zenderland, 1998). A more contextualized history concerning how the use of intelligence tests such as the Binet-Simon and the Terman tests spread within the French and North-American republics has also been published more recently (Carson, 2007). Many historians are guided by the idea that quantitative (statistical) methods representing “democratic techniques” elevated intelligence as the key to human progress and outlining a new meritocratic order in society (Brown, 1992).

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<sup>1</sup> “Possessed by an innate will to experiment (...) we jumped into the dangerous path of practical psychometry” (Cabós, 1920, p. 40-41). Here and in what follows, all the translations from Spanish and Catalan quotations are our own. We thank Christopher Evans for linguistic corrections.

The history of mental measurement seems complex and, despite the efforts already made, there are still many open questions. A first question refers to what happened in other cultural contexts, such as Spain. Some research has been carried out into the role of several institutions which were instrumental in the spread of mental tests in Spain, namely the *Institución Libre de Enseñanza* (founded in 1875), the teacher training colleges (*Escuelas Normales* and, since 1909, the *Escuela de Estudios Superiores de Magisterio*), the pedagogical museums, the psychotechnical and professional guidance institutes, school medical inspection, and special institutions such as certain psychological laboratories and institutions for the mentally challenged (*La Escuela Central de Anormales* or the *Patronato de Anormales*) (see García Yagüe, 2007; Herraiz, 1995; Huertas, 1998; Molero & Del Pozo, 1989; Monés, 2000; Siguán & Kirchner, 2006). Also, some major works on the history of psychopedagogy in Spain have been published in recent years (Cerezo, 2001; Moreu, 2000).

Despite all this research, we still lack precise information about when and especially why mental tests were used in Spanish schools. Following Sokal's call for a more detailed, technical, and contextualized history (Sokal, 1984), we consider what intelligence tests were used in Spanish schools and especially how and for what purpose they were applied. This can best be shown by taking a closer look at a specific case.

With regard to the bibliography cited above, our approach differs considerably in two respects. First, instead of describing the historical succession of psychological and pedagogical theories and methods, or reviewing the work of one or more institutions, we examine how mental measurement has been practiced. Second, most of the historical research into testing is based on the experiences of psychologists, school physicians, hygienists, eugenics workers, pediatricians, pedologists<sup>2</sup> or psychiatrists. What are often ignored, or touched only marginally, are the

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<sup>2</sup> Pedology (also paidology or paedology, in Spanish called "paidología") is a term suggested in 1893 by Oscar Chrisman and refers to the comprehensive science of the child.

teachers' points of view and their first experiences with testing. In North-American historiography Raftery (1988) has argued in favor of such case studies, noting that the claims of theorists are far removed from the actions of rank-and-file classroom teachers. Psychological testing in schools was instigated by the "hygienic" call to segregate the so-called "abnormal" child from the crowded public schools, in order to facilitate better advancement of the "normal" children in school education (Del Cura, 2004). In countries such as Spain, identifying and taking care of the new human category of the "backward" (in French: "arriéré") or "mentally abnormal" was a task that, despite the lack of official regulation, was immediately appropriated and included in the range of professional intervention of the physician (Campos, Martínez Pérez & Huertas, 2000).

Psychology as profession, and more specifically mental measurement, played only a minor role in Spain during the period before the Civil War. Some physicians (more precisely psychiatrists) specialized in psychology and demonstrated a strong interest in applied branches such as psychopathology, pedagogical psychology, and psychotechniques. Two important representatives of that group who made efforts to introduce and adapt psychological tests were Rodríguez Lafora and Emilio Mira y López; the first working at the *Patronato de Anormales* in Madrid and the second at the Institute for Professional Guidance (*Instituto de Orientación Profesional*) in Barcelona (Kirchner, 1975; Sáiz et al., 1996).

In the field of education we find a strong interest in modern scientific psychology, and more specifically in pedagogical psychology, spreading from the professional and institutional network lead by the *Institución Libre de Enseñanza* (Lafuente, 2002). At the time, Spanish schoolteachers were fighting for better working conditions and one strategy they adopted was to promote better training and expand professional competence. The teachers' college, *Escuela de Estudios Superiores de Magisterio*, was instrumental in this effort. Influenced by

new pedagogical trends such as the “new school”, the “active school”, Montessori’s schools, Froebelian methods, Claparède’s functional pedagogy and Decroly’s techniques among others, with the advent of the twentieth century progressive Spanish pedagogues and educators lived through an exciting historical period of and experimented with innovative pedagogical and psychological tools and ideas (Del Pozo, 2003; González Agápito, 1992; Monés, 1977, 2011). In this context, the introduction of psychological testing was led by the pedologist Domingo Barnés and the pedagogue and physician Anselmo González.

Historians have argued that mass testing spread because it was considered useful in the search for solutions to urgent problems in the public school system. In the North-American setting, the use of intelligence testing has been linked to the new role adopted by the schools as “sorters” in a multicultural democratic society; they offered an instrument and a “scientific” justification for the discrimination of immigrants and the establishment of rankings and tracking (Chapman, 1988). In the light of these observations, it seems necessary to start by taking a look at the Spanish educational system at the time. After a general comment, we will explore the trial in mental testing performed by a public primary teacher in Barcelona, who was considered by his colleagues to be a pioneer in this activity. The question as to his purpose will guide us towards an analysis of the personal motives and professional interests of that “rationalist” teacher and will help to identify forces pulling in opposing directions that were active in the local context at the time. Although the case cannot be generalized or taken as paradigmatic for mental testing in general, not even in Spain, it turned out to be instrumental in exploring the similarities with other testings of that time, as well as in pointing to the idiosyncrasies or specificities of such activity in the hands of a teacher from Barcelona in the early twenties.

## 2. THE SLOW MODERNIZATION OF THE EDUCATION SYSTEM IN SPAIN

The Moyano Law of 1857 made primary education mandatory for all Spanish children aged between 6 and 9 years, a regulation that would be extended to the age of 12 (in 1910) and later to 14 (in 1923) (Hernández Díaz, 2006, Cuesta, 1994). By law, all towns with more than 500 inhabitants were required to have at least one elementary school for boys and another for girls. Following the idea that basic formal education is the right of every citizen, the aim was to offer free education to all. But the 1857 law excluded only the extremely poor from payment, while later laws (after 1910) aimed to extend this to the whole population (Cossío, 1915).

As public education expanded, control seemed to become necessary. Teachers' schools (*Escuelas Normales*) were founded to regulate the access of professionals to new positions, as both elementary and secondary teachers (Monés, 2000). In 1900, the Ministry for Public Education and Fine Art (*Ministerio de Instrucción Pública y Bellas Artes*) was created which was charged with regulating and supervising educational affairs. School inspectors were contracted to oversee public education and draw attention to the prevailing unhealthy school conditions. Physicians reacted to this call and became active in promoting hygiene at schools; the lack of which was considered to be a primary problem at the time. During the first decades of the twenties century, the first school physicians in Spain would examine the infant population through anthropometric registers, working mainly on a voluntary basis (regarding the difficulties with the official regulation of this collective see Del Pozo, 2000).

Despite these efforts, not nearly enough public elementary schools were established. According to the available statistics, less than half of the children of the designated age actually enrolled in an elementary school (Guereña, 1990). If we add to this the extreme irregularity of attendance of those who were enrolled, we can see the limited reach of general

education at that time. Insufficient public investment led to a lack of public schools in general and constant problems with the payment of teachers' salaries (left in the hands of the municipalities). In Spain during the early decades of the twentieth century, there is migration of the national population towards the industrialized urban areas, with virtually no influx of foreign migrants. Therefore, the greatest problem was not the coexistence of people with different ethnic origins, but undoubtedly the extremely miserable living conditions in some suburbs and rural areas together with the high percentage of child employment in working families who needed every financial contribution they could muster. These problems were well known but political initiatives aimed at solving them through regulations often did not even get passed the level of parliamentary discussion. Nevertheless, public schooling expanded during the Primo de Rivera dictatorship in the 1920s and even more notably with the advent of the Second Republic in the following decade.

Apart from the growing number of public schools, private primary schools persisted: mainly some offshoots of Ferrer's anarchist "modern school" (after 1909 called "integral schools"), schools linked to the *Institución Libre de Enseñanza*, and conservative schools of religious (Catholic) congregations. The most successful group of pedagogical reform projects was linked to the *Institución Libre de Enseñanza*. The main differences and debates that took place between these different approaches dealt with: coeducation of the sexes; laicism and anti-ecclesiastic education versus religious catechism; and traditional versus child-centered, modern pedagogy, to mention just a few. While primary education was split between these different schools, secondary education, in contrast, would still remain firmly in the hands of private (mostly religious and costly) institutions, accessible only to the economically privileged (Cuesta, 1994).

As part of the agenda of the reformers, changes in school organization were proposed and, to a certain extent, introduced. One of

them was the “graded school” (*Escuela graduada*)<sup>3</sup>. For A. Ballesteros, the principal promoter of graded schools in Spain, it represented the only kind of school organization that permitted an education adapted to the psycho-organic condition of the child and the educational aims of modern pedagogy (Viñao, 1990). However, graded schools were introduced in Spain with great financial and organizational difficulties. Only 631 graded schools were functioning in 1923, most of which had only 3 or 4 grades (del Pozo, 2005). There were only a few exceptions, such as Pere Vila’s school in the 1930s at which the third grade was subdivided into four parallel groups with A for the most intelligent and D for the children with the lowest level (Martí, 1936).

Secondary education was exclusively for the privileged elite and professional orientation was provided free at the Institutes for Professional Guidance (IOP) of which one was functioning since 1920 in Barcelona. In other specific cases, testing could be used to identify abnormal children, but there were not many public institutions to take care of these children and any final decision of this kind always depended on medical criteria (Herraiz, 1995). As has been argued in a former study (Mülberger, 2012), in such an educational context, intelligence testing by teachers did not seem too pressing either for sorting students into different grades or for separating the “abnormal”, or foreign child. Why, then was a Catalan teacher interested in spreading this practice into public schools?

### 3. “PRACTICAL PSYCHOMETRY”: MEASURING INTELLIGENCE AT A GRADED PUBLIC SCHOOL IN BARCELONA

#### 3.1. THE TEACHER AND ACTIVIST LLORENÇ CABÓS

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<sup>3</sup> It implied a change from the “one-room school” (*Escuela-aula*) where one teacher, helped by an assistant or student, was in charge of a heterogeneous group of children of different ages and levels, to a “college school” (*Escuela-colegio*) which several separate rooms for different groups of children that were supposed to be more or less homogeneous in relation to their age, level of knowledge and/or intelligence (Viñao, 1990; Del Pozo, 2005).

In this paper we focus on a drive for mental testing that came from a Catalan teacher named Llorenç Cabós i Badia, who was working at one of the public graded primary schools located in Barcelona (specifically at: 43, Paseo San Juan). Although Cabós was not the first to apply mental testing in Spanish schools in the 1920s he became one of the most important pioneers and popularizers of psychological testing in Barcelona (Moreno Lozano, 2010). It was a time when there was no official (adapted) Spanish version of the tests available<sup>4</sup>. The pedagogue and contemporary of Cabós, Alexandre Galí, indicates Cabós' role as the initiator stating that his testing was performed "*when nobody was yet measuring at primary schools in our country*" (Galí, 1979, p. 109).

In Barcelona, as we mention above, the Institute for Professional Guidance was the place where all kinds of anthropological measurements, psychotechnical examinations and psychological testing (especially the Terman test) were performed. However, as Cabós recognized in 1920, psychometry still had to be applied in public schools. Therefore, he declared: "*the moment has come for the public teachers of Barcelona to undertake some trials of psychometry*" (Cabós, 1920, p. 40). The Catalan teacher described his testing adventure with the words cited at the beginning of this paper: "*Possessed by an innate will to experiment (...) we jumped into the dangerous path of practical psychometry*" (Cabós, 1920, p. 40-41). Who was this man, who was conscious that what he was doing could have "dangerous" implications or consequences?

He is a fairly unknown historical figure. After consulting several archives and newspapers we discovered that he finished his superior grade as a teacher in 1907 in Barcelona (La Vanguardia, 1.10.1907, p. 3). During his training he probably became acquainted with anthropometric measurements and the problem of "abnormal" children through the teaching of the pedagogue August Vidal Perera (Monés, 2000).

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<sup>4</sup> The first official adaption and translation would be performed later in Madrid by Rosselló and Rodrigo (Herrero, 2003).

At the beginning of his career he was linked to some rationalist and anarchist pedagogues and educators, grouped around Clemència Jacquinet<sup>5</sup>, who at that time had distanced themselves from Ferrer y Guardia's "*modern school*" movement (Solà, 1978, see also *La Vanguardia* 26.10.1907, p. 3). Jacquinet was a French pedagogue who shared with Ferrer the influence of neo-Malthusianism and the idea of education overcoming social classes in order to prevent further exploitation of the proletarian mass. However, she differed from Ferrer in her defense of a free (libertarian) education that would take care not to indoctrinate the children in any direction, but to foster their sense of solidarity. She insisted once and again that the educator has to follow the necessities and curiosities of the child, without exerting any force on them (Solà, 1978).

Cabós wrote for the neo-Malthusian journal ("*Salud y Fuerza*") dedicated to "social emancipation for human regeneration". His writings published in this journal reproduced Jacquinet's convictions and ideas in line with those of Albà Rosell, another disciple of Ferrer (Cabós, 1908, 1909a, 1909b; Monés, 2011). Moreover, he participated in political meetings and delivered talks at institutions linked to the workers' movement such as the *Ateneo Enciclopèdic*, *Federació Obrera*, and the *Integral School* in Sabadell (Masjuan, 2006). In his talks and publications from that period, his general discomfort with society and combative attitude become apparent: he openly criticized the Catholic Church, and denounced the lack of social solidarity and ideals in modern society.

His thoughts reflect the turbulent times he was living through, characterized by constant outbursts of social conflict. Biographies of other libertarian activist pedagogues such as that of Ferrer or Cabós' personal friend, Samuel Torner, show that at that time anarchist

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<sup>5</sup> Jacquinet (born 1865) was appointed director of the first "modern school" founded by Ferrer in 1901, which soon expanded to more than 35 schools. The pedagogical program was based on laic, interclass coeducation of boys and girls, who were taken to factories and museums for training, eliminating all kinds of rewards or punishments. During her stay in Barcelona she collaborated with the local anarchist working-class press and published several books on education.

educators and workers' activists were time and again punished with governmental reprisals and imprisonment (Dalmau, 2011; Monés, 2011). The "Tragic Week" ("*semana tragica*") of 1909 was the most dramatic event which led to renewed oppression of the workers movement and the practical disappearance of modern schools (Monés, 2011). Meanwhile the neo-Malthusianist and rationalist movements were losing force (Masjuan, 2006). Cabós distanced himself from anarchism and decided to work for the state. In 1916 he passed the selection procedure for a position as a teacher at a public graded school, of which he would later be appointed as director (La Vanguardia, 29.2.1916, p. 3).

Comments circulating at the time make it clear that Cabós became a highly-regarded educator who was active in the local teachers' association (*Federación de Maestros de Cataluña*), where he founded an insurance cooperative (*Mútua de Socorros "Ramon Llull"*). His contemporaries were probably aware of his rather undogmatic attitude, his critical social concerns, his ability at teaching mathematics, and his engagement in the teachers' cause. Moreover, he was appreciated for his moves towards psychometry (see, for example, Anonymous, 1922).

Cabós' report of 1922 shows that the local authorities supported him in his attempt to apply mental tests at a public school. He worked within a social and institutional network in Catalonia that through the policy of regional Government (*Mancomunitat*) had opened new spaces and enforced projects dealing with the introduction of new pedagogical and psychological methods (regarding the role of this institution in the creation of new schools during previous years under the influence of Prat de la Riba and Joan Bardina, see Monés, 2011). Therefore, he thanked the school director and the Cultural Committee of the Barcelona City Council (*Comissió de Cultura de l'Ajuntament de Barcelona*)<sup>6</sup> for supplying the

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<sup>6</sup> This Committee, created in 1917 under the direction of Manuel Ainaud i Sànchez, was effective at ameliorating the public school service in the city by carrying out an ambitious plan that included the establishment of several new well-equipped public schools (called "Grups Escolars"). A report published by this committee in 1916 clearly shows the intention of the City Council to support pedagogy, understood as modern science of the child (Domènech i Domènech, 1995; Archival document: Comissió

school with a substitute teacher for the year 1920-21, thereby permitting Cabós to dedicate his time to the testing.

### 3.2. TESTS FOR MEASURING INFANT INTELLIGENCE

During the school year 1920-1921 he undertook a seemingly self-taught application of the Yerkes, Bridges and Hardwick test to 100 schoolboys (aged between 7 and 14) selected at random from the students at his school (Cabós, 1920). The American scale was a modified version of the Binet-Simon test published in 1915 under the title "*A point scale for measuring mental ability*" by Warwick & York (Baltimore). In the following years, Cabós experimented with and compared three tests: the Binet-Simon (1911), the Yerkes, Bridges and Hardwick (1915) and the Terman (1916) tests (Cabós, 1922). In his course on testing (Cabós, 1923c) he argued that he selected the second scale for his first trial because it seemed to offer the ideal combination of guarantees of exactness while maximizing ease of application. However, as the Binet-Simon test was much better known to teachers, he took the trouble to indicate the differences between the two scales and the way to administer the points.

In the 1920s, the business of intelligence assessment was booming (Carson, 2007). Several psychological tests were sold on the Spanish market for the reasonable price of approximately 2.50 pesetas (less than the cost of a normal book). Salaries in general, and teachers' salaries especially, were extremely low at that time in Spain, but in cities like Barcelona there were pedagogical "museums" supplying school professionals with free access to all kinds of educational material. Thus, when Cabós reported that he had several tests available (Cabós, 1923c, p. 52), he was probably using that service (Rovira's Pedagogical Museum). His citations show that he had access to the Wipple directory and Spanish translations of mental tests published in Rodríguez Lafora's book on

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d'Instrucció Pública de Belles Arts, 1916). Already in 1911 Eugeni d'Ors, a member of the committee, had recommended that Catalan teachers apply this new technique in order to register and classify retarded schoolchildren.

mentally abnormal children (1917), where the Yerkes, Bridge, and Harwick test was presented as a superior alternative to the Binet-Simon scale.

### 3.3. CABÓS' RESULTS, COMPARISONS AND CONCLUSIONS

Cabós immediately announced his positive impression that, in general, the children of Barcelona seem quite clever (Cabós, 1922). After examining 100 children of different ages he could show with the help of a table the intellectual superiority of the local infant population (see the table reproduced in Figure 1).

				<u>Yerkes-Bridges</u>	<u>Nosotros</u>
5	años, puntos...	...	...	22	31
6	»	»	...	29	35
7	»	»	...	34	41
8	»	»	...	39	50
9	»	»	...	52	55
10	»	»	...	59	61
11	»	»	...	64	69
12	»	»	...	64	73
13	»	»	...	74	74
14	»	»	...	78	78,5

Fig. 1. Comparison of Cabós' results (average score per age for a sample of 100 children at a graded school) and those of Yerkes, Bridges, and Hardwick (1915, p. 64) (see Cabós, 1920, p. 44).

Analyzing his results he found that 62% of the children were advanced with regard to their age and 33% of the children slightly "backward". Only in 5% of Cabós' cases did the scores obtained correspond to the points achieved by the North-American children of the same age, examined by the authors of the scale.

Cabós' closer analysis of the children's responses is also interesting. As all of them were able to distinguish correctly between different magnitudes and sizes, comparing lines and weights, he concluded that this mental process must be innate and the origin of human knowledge. In the other tasks, not all the children were successful. Cabós accordingly interpreted success in these areas as a result of experience; essentially school training (*trabajo escolar*) and education (Cabós, 1922).

In general he observed that his children did not do so well on the linguistic tasks, such as when asked to form a sentence from only a few given words. In his view, this proved "poorness" of vocabulary and must be due to the fact that the children were generally bilingual, speaking partly Spanish and also Catalan (or Valencian) (Cabós, 1922).

Another kind of exercise at which most of his students failed was the "mechanical memory" tasks in which the child had to repeat sentences or numbers. Cabós seems to be proud of this deficiency as he immediately explained that in his school "*we only work with mechanical memory to a limited extent*" (Cabós, 1922, p. 94). This is exactly how he expected the pedagogy of his public school to differ from traditional education: while in the former, the work is aimed at maximum clearness of reason; in the latter, education still meant repeating by heart abstract material that was not understood.

Cabós' first report ended with three concluding remarks (Cabós, 1920). First, he reported that the application of the metric scale of intelligence was really straightforward and easy; an observation that surely invited other teachers to follow his example. Secondly, in his opinion the application of psychological tests was useful and should be made compulsory for graded schools, where there was enough staff to take care of this service. Thirdly, Cabós insisted on the importance of keeping a register of the results achieved by each student.

### 3.4. THE USES OF CABÓS' PSYCHOMETRY AND THE AIMS BEHIND IT

In general, analysis and conclusions are sparse in Cabós' reports. Was the effort of an entire year of hard work and essentially producing one comparative table worthwhile? Looking at his results, one could even question the validity of the method used and Cabós' comparison, as the results differ considerably from those obtained by the North-American authors. However, instead of critical reflections on the method, from his comments it seems that the results suggested something quite different to Cabós. From the information we have about his activities we can deduce that he pursued two main aims.

His first aim was to introduce modern scientific methodology into daily educational practice to up-grade his profession. He wanted to demonstrate teachers' capacity to apply what was seen as a scientific method of mental testing and to guide other teachers in carrying out intelligence testing. Therefore, he presented the test thoroughly, and even elaborated a booklet in Catalan to facilitate the application of the Terman test (archival document). The City Hall sponsored his booklet supporting the popularization and diffusion of testing.

For Cabós the application of a mental test meant running a psychological experiment. His case exemplifies how certain Spanish educators took advantage of the fact that children and tests were at their disposal and tried to gain professional authority and scientific expertise through "learning by doing", applying mental tests. Historians like Brown (1992) have shown that educational psychologists in the United States promised scientific and professional validity through testing, a call that fed educators' desire to improve the low social status of their profession.

His second aim was to offer numerical data in an attempt to make the intellectual level of Spanish children visible and public. Expressions like the following: "*Facts say more than words*" (Cabós, 1920, p. 44) show his preference for quantitative information and the value he

attributed to numbers per se. This is especially evident in his report of 1920, based on the results without any interpretation, where he stated: *"the sight of these numbers invites the reader to form numerous thoughts which he should do himself"* (Cabós, 1920, p. 43). But what was the use of such numbers? Cabós thought of three types of uses. The first would be an internal and immediate use through adapting his educational practice to the measured minds of his pupils. Repeating a common slogan of the time, he stated that mental testing is useful for the teacher's daily educational practice because it helps him or her to *"improve his art to educate from day to day, through more profound and extensive knowledge about the intellectual and neuro-psychical dynamics of his pupils; based not on classical apriorisms, but on individual or collective observations and experiments"* (Cabós, 1922, p. 94).

The other two uses were external to his teaching in the classroom. Cabós expected his numbers to be welcomed and of use to psychology and pedology as empirical information about the infant mind in the local context. Moreover, psychological numbers such as those he had obtained could be used for national political purposes. The comments annotated to his table hint at a kind of national and international competition. He examined the "psychological quality" of the local group of schoolboys in relation to foreign children, in this case the children used by Yerkes, Bridges and Hardwick (1915) to standardize their scale, with the rewarding upshot of demonstrating the excellent performance of his sample. Who would have expected these results, knowing that:

- a) previous applications of intelligence tests (like that of González, 1914, Xandri, 1917 and others) had evidenced a lower performance of Spanish children; and
- b) that the children at public schools were from the lower social classes?

Taking into account the local historical context, a national comparison may also have been implicitly included in the scope of the study. The educational context was rather complex with several private

schools competing. Previous testing had clearly been performed with this intention of comparing schools (Mülberger, 2012). It is highly probable that Cabós wanted to campaign for his modern public graded school. He could now demonstrate scientifically the “psychological value” of working-class children, as a result of receiving excellent education.

#### 4. REGISTERING MINDS AT SCHOOLS: WHO IS THE PROFESSIONAL IN CHARGE?

##### 4.1. ENCOURAGEMENT FOR TEACHERS

Before and during the technocratic dictatorship of Primo de Rivera (1923), Taylorism, with its focus on time control, rationalization and efficiency, spread rapidly. State control and an increasing number of school children led to a higher level of bureaucratization of the educational system. Additionally, the growing influence of hygienism, which implied extending medical control, together with the “child movement” in the form of pedology, paved the way for increased interest at schools in registering anthropometric variables, psychological characteristics, and intellectual performance of each pupil.

Since the 1880s, the interdisciplinary child-study-project of psychologist Stanley Hall addressed precisely teachers who were asked to contribute with their observations to psychological science. Zenderland (1988, 1998) has convincingly shown how this movement generated a new generation of schoolteachers-turned-psychologists in the United States such as Goddard and Terman, who would lead the mental testing movement.

In the case of Spain, the child study and mental testing movement arrived mediated through scientific and personal connections to Paris and Geneva, having only a limited effect. That was mainly for two reasons. First, the difficulty in reaching the whole infant population because, as mentioned above (part 2), not all the children went to school and even fewer attended in a regular manner over much time. Second, in general,

the State or the municipalities was far from being able to mobilize resources efficiently and create the institutions necessary (such as municipal or educational research bureaus) to undertake testing on a large scale as happened in the United States. For such an undertaking the Institutes for Professional Guidance would not have been enough.

However, some interest in pedagogical psychology and mental testing arose. Towards the beginning of the twentieth century teachers were becoming active and demanding immediately a place among the “*technicians of the infantile soul*” (Azpeurrutia, 1923, p. 414). At that time stimuli were to be found to encourage teachers to practice psychometry. On one hand because test results were seen as an important way to spread public knowledge about social statistics and, on the other, as a way to develop teaching based on scientific findings about the individual psychological conditions of each child. In what follows, we cite an example for each kind of stimulus that were directed at Catalan teachers.

When Cabós published his results, Joan Crexells (1922), an influential Catalan intellectual, campaigned for quantitative psychological data to be made public, because there was a lack of statistics about the Catalan child. Gathering large amounts of results would allow the “normal” physical and psychological development of the local population to be known. He encouraged explicitly teachers to take all kinds of measurements of their students.

An idea that was repeatedly voiced at that time was that, although far from perfect, mental testing helps to make the psychological characteristics of individuals known. Local pedagogical journals including *Revista de Pedagogía*, *Boletín de la Institución Libre de Enseñanza*, *Butlletí dels Mestres*, *Quaderns de Pedagogia* informed about the successful mass testing performed in the United States. The pages of these journals reflect the close contact which existed between Spanish pedagogues and foreign experts enhancing mental testing, especially Claparède, Montessori, Decroly, and Simon.

The French physician Théodore Simon (1872-1961), for example, reminded professionals of Binet's previous demonstrations that showed the incapacity of teachers to know their pupils intuitively. "*We think we know the children merely because we live with them*" (Simon, 1923, p. 285), he declared, believing that it was a very wide-spread but false impression. He compared the teacher to an engineer: in order to ensure that a bridge he is going to build will resist, he subjects the material (iron or cement) to some tests. "[W]hy should these tests be less necessary in children?" (Simon, 1923, p. 285).

For Simon, mental tests represented the most appropriate experimental method to gain knowledge of the psychological stages of infant development. He charges teachers with undertaking systematic testing within regular teaching at the beginning of each year in order to obtain the precise numbers or description needed for each evolutionary stage. He believed the application of psychological tests in general would avoid what was called "blind teaching" and enable the pedagogical intervention to be adapted to the children's needs by classifying them. Although an individual examination would be preferable in all cases, from a certain age on it is possible to perform collective testing.

When it came to specifying the kind of pedagogical adjustment required once the results were obtained, Simon was rather vague. He insisted that it was essential for the teacher to meditate on the results and to adopt the "personal" (intimate) knowledge gained about each student into his or her daily educational practice. He did not want to deliver any easy recipes, but left the teacher with general indications: "*as they immerse themselves into the spirit of the pupils... they will notice how their qualities as teachers increase*" (Simon, 1923, p. 339). Thus, Simon's recommendations left the interpretation and pedagogical adjustment to the personal criteria of the teacher, so his or her daily educational practice would evolve spontaneously with the help of the psychological knowledge gained about the pupils through repeated testing.

Cabós seems to have followed Simon's advice as he used the French clinical method (Danziger, 1990), spending time with each of the 100 boys and performed an individual examination. Also his emphasis on developmental stages shows the influence of Binet's approach. The aim of testing mentioned by Simon fits with Cabós' earlier call for more individualized, rational, education. For decades he had maintained that instead of ideological imposition, the educator should follow the needs and interests of each child. In his view, education should be based on modern science and lovingly relations between teachers and pupils (Cabós, 1925; Cabós, 1909b; about the rather curious combination of the role of love, "puritan" morality with the emphasis on solidarity, reliance on science and modern scientific techniques present in Catalan anarchist libertarian thinking and rationalist pedagogy, see Monés, 2011). Simon's indications with regard to the use of the results seem to justify the scarce interpretational effort made by him in his articles.

#### 4.2. INHIBITIONS

Some experts like we have seen in the case of Simon discredited the intuitive criteria used traditionally (and naturally) by the teacher in evaluating the intellectual capacities of his or her pupils. At the same time, education was meant to be adapted to the children's individual capacities and needs in an overcrowded classroom. As these trends increased, the more teachers felt the need to undertake testing themselves. Teachers performing tests reinforced their professional position as "experts of the healthy child" and took advantage of their situation of daily interaction with a great number of children (a class group of 50-80 students was quite normal at that time). But they only entered psychological research to a limited extent, as there were also inhibiting forces.

At the same time, expert recommendations such as those of Simon and a comment on testing published by Dwelshauvers (1922) evidence a

fear of possible abuses of these methods. They remind teachers that testing is not the primary aim of teaching. Moreover, there was no invitation to go beyond the mere exposition of comparative results, to make any critical or theoretical reflections about method or conceptual implications. These calls to take care are also reflected in Cabós' recommendations on testing (Cabós, 1922).

The well-known pedologist Domingo Barnés, for example, presented the Binet-Simon test to teachers together with helpful instructions (Barnés, 1921). At the same time, he warned that the average teacher needed specific psychological training in the laboratory to be capable of obtaining results of scientific value. In a similar vein, the Spanish psychologist and pedagogue Juan Vicente Viqueira in his book on pedagogical psychology (1926) offered a presentation of the relevant theories explaining human conscious processes. Only in a short methodological note did he mention the methods for examining intelligence. He was very cautious about only "selling" teachers pedagogical psychology in the form of scientific knowledge, in an attempt to impede this collective from carrying out any research by themselves. Therefore he repeated his warning made already in 1915: "*The teacher has to know the results of [psychological] research; but it is not necessary for him to investigate. The work of the psychologist is that of a specialist and requires a great variety of instruments and, above all, time the teacher usually does not have*" (Viqueira cited in Nin, 1916, p. 96).

Meanwhile, in contrast, Anselmo González was offering systematic training in mental testing to all the teachers at the *Escuela de Estudios Superiores de Magisterio* in Madrid. He stated that a scientific instrument such as the Binet-Simon test does not require any special medical training, clarifying that: "*it is even suitable for use by teachers who, in performing testing, do not run the risk of overstepping their professional boundaries*" (González, 1914, p. 7).

The positions of Barnés, Viqueira and González are only examples of positions voiced at that time about demarcating professional expertise and the psychological training necessary to be able to administer mental tests (for more information see Del Pozo, 2000; Graus et al., 2012; with a similar exchange of arguments to the debates in the United States, see Zenderland, 1998). It is highly probable that, despite these inhibitions, Cabós went on testing the intelligence of his students in the years to come and that several of his fellow teachers followed his example like Sanz and Martí. This is difficult to document, however, because the intimidating criticism in general enforced the internal, pedagogical, use of the testing as a way to interact with the children and to adapt teaching to the pupil's needs and capacities in class. Other pedagogues, such as A. Galí, preferred to work with pedagogical tools such as the achievement test, of which he developed his own version (Galí, 1928).

Moreover, the Institute for Professional Guidance offered the testing service for free in Barcelona and was desperately seeking the cooperation of teachers to send their students to be tested. Although Cabós' activity invaded the Institutes' professional terrain, to a certain extent he managed to cooperate with the Institute by presenting his research to the community of experts at the Second International Conference of Psychotechniques organized in 1921 in Barcelona. After 1923 there are no more publications by him on this topic. The rise of the Primo de Rivera dictatorship debilitated Catalan regional government and Barcelona City Council which had supported his initiative. Now his effort in adapting the testing to the local language came under suspicion from the new centralized (anti-Catalan) government, as it was contrary to official policy. Nevertheless, it seems that his impact among his fellow teachers lasted beyond the years of the Primo de Rivera regime as up until at least 1933, he was time and again invited to give talks and courses to teachers on intelligence testing (see Monés, 2000, p. 312).

## 5. THE TEACHER AS TESTER

### 5.1. RATIONALIST PEDAGOGY AND RELIANCE ON NURTURE

After becoming acquainted with some aspects of Cabós' biography, we may wonder how it is that a former "rationalist" teacher (linked to anarchism) became an advocate of intelligence testing in public schools in the 1920s. How does this fit with what he said in 1909 when he made statements such as: "*we cannot measure all children with the same parameter although they are the same age*" (Cabós, 1909b, p. 437)?

Of course Cabós must have changed his attitude with regard to the state, but we argue here that, on the whole, he was not as inconsistent as it may seem at first sight. From the beginning of his career he was concerned about the education of working-class children and as a public teacher he was still dealing mainly with socially disadvantaged children; children who, in the Spanish cities of the time, lived in extremely miserable conditions (see Cabós, 1925; Rodrigo & Rosselló, 1923). Whereas traditional schools tried to control these children through severe discipline in an attempt to produce docile citizens, Cabós' objective, in line with rationalist pedagogy, was to offer first-class individualized public education to working-class children in an attempt to emancipate them and create responsible and reflective citizens with a free, dignified, and independent personality (González Agapito, 1992; Monés, 2011).

Modern experimental science played a crucial role in rationalist pedagogy in two ways. First, as a means of waking the infant mind through their quest for knowledge about the world, and explaining to them the plain truth about Darwinian theory with all its implications with regard to human origins and the struggle for life (Cabós, 1909; for more information about the use and interpretation of Darwinian and Spencerian theories by Catalan "collective anarchists" and educators see Girón, 2005; 2010). Second, science functioned as pedagogical methodology. The only way to overcome preconceived views about

childhood is to make new observations; the more empirical and accurate the better.

In line with educational optimism and the intention of enhancing their professional field, teachers attempted to contribute to experimental psychology from a different angle than most physicians (and psychologists). While worries about race degeneration were more common among physicians (Campos, Martínez Pérez, Huertas, 2000), pedagogues and educators, in Spain as in other countries (Trone, 1999), relied heavily on the power of education, convinced that intelligence increases with age and that education mainly determines the individual differences in the child's performance in the tests. Raftery (1988) has shown similarly that, in the case of the United States, teachers immediately detected cultural biases in the tests. By constantly invoking pedagogical methods as responsible for the results,<sup>7</sup> Spanish educators were following more Binet's thinking about the tests and his "mental orthopedics" than the hereditarian position of some North-American psychologists such as Terman and Goddard. Therefore, more than evaluating the genetic constitution of the child, they thought they were evaluating the effectiveness of pedagogical methods.

## 5.2. FREE APPROPRIATION

Cabós and other Spanish pedagogues and educators in the 1920s were aware of the problems and the methodological difficulties of mental testing (Cabós, 1923a). Already in 1914 Anselmo González had listed criticisms the Binet-Simon test had received in the discussion held at the First International Congress of Pedology (Brussels, 1913). Once the test's faults were made public, the psychological instrument became malleable, justifying *ad hoc* adjustments introduced by the experimenter.

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<sup>7</sup> The texts indicate that Spanish educators and pedagogues understood the difference between Vaney's pedagogical test (also called "achievement test") and intelligence tests like Binet-Simon's or later versions.

As happened in other countries, so in Spain the testers adapted their scales through various strategies including: translating the instructions, reordering the tasks, and changing, to a certain extent, the material. For teachers such as Cabós, and other Spanish educators and pedagogues such as González and Rodríguez Mata, the psychological technique was not a black box, a sacred universal, standardized instrument, but an inspiring, clever base of questions and material, which served to develop a certain kind of interaction with the child's mind. Local testers did not give importance to the modifications they introduced and, therefore, commented on this only vaguely. Nevertheless, they knew perfectly well about the necessity to reproduce the exact instructions and situations with each child.

Cabós had access to the tests and the translated instructions through Lafora's book, but he had no access to the material accessories. Luckily, as he informs the reader, these were simple enough to be reproduced manually (he even gave instructions on how to do this in his report 1922). Despite this relatively easy solution, the Catalan teacher knew that his self-made cubes and cards with illustrations could have influenced the performance of his sample, making his international comparison unreliable.

Even more problematic, however, was the application of Terman's vocabulary test in Spain. Cabós was aware of the fact that the most common words are not the same in different cultures. The psychologist Emilio Mira y López, who was working at the Institute for Professional Guidance, eluded this test by substituting it with his own "P-test" (*prueba de las pes*) (a test in which the child had to say all the words he or she could think of in one minute starting with a certain letter). Nevertheless, Cabós was aware of the importance of this part of the Terman test and made an effort to find a series of the most common Spanish words in a list elaborated in Cuba (Aguayo, 1921) and took the trouble to translate them into Catalan for his local sample. Raftery (1988) has shown that through

testing Mexican children in Los Angeles in the 1920s, educators recognized similar problems with translated intelligence tests.

After spending some time experimenting with different kinds of psychological tests, Cabós felt ready to make his own original contribution: he designed some tasks to be performed with the help of a stereograph he invented, in order to study the child's capacity to orient himself or herself in space. Thanks to his previous grading experience, he was able to observe that: "*success in interpreting space is directly related to intelligence quotient*" (Cabós, 1923b, p. 419). Following Mira's classification of intelligence, he suggested that this test could be helpful in evaluating "mechanical intelligence" and substitute some of the tasks of the traditional intelligence tests, because his tasks with the stereograph would be more effective at determining mental age in children and in examining the relation between touch and vision.

## 6. CONCLUSION

At a time when pedagogy was becoming increasingly psychologized, some teachers such as Cabós experimented with mental tests in Spain. Partly encouraged by experts but also partly inhibited, they timidly entered the scene as part of a professional collective with a rather low social status and insufficient scientific training. The straightforward and apparently easy technical application and experimental conception of mental tests made such a method very appealing to teachers, in an attempt to upgrade their profession. Therefore, teachers such as Cabós tried to popularize mental testing within the pedagogical profession as a way to appropriate scientific methods and produce statistical results for the science of psychology.

Information about the new adapted test versions and North-American mass testings arrived to Spain together with critical voices, opposing the use or, at least, a certain use of these techniques. Some of the arguments exchanged in foreign contexts were echoed in Spain in a

confrontation between psychiatrist-psychologists, school physicians, pedagogues and teachers about who should be the professional in charge of detecting the “abnormal child” and to do psychological testing.

North-American psychologists such as Terman developed their versions of the test and dealt with intelligence as a unique, fixed, inherited characteristic of a human mind. Physicians and psychologists in Spain were also worried about degeneration as well as identifying innate traits for professional orientation. Teachers, in contrast, relied on education and culture as determining factors of differential infant intellectual capacities that could be visualized through psychological tests such as those of Binet-Simon, Terman or Yerkes, Bridges, and Hardwick. In Spain, as elsewhere, teachers immediately detected cultural biases in the tests. Therefore, when it comes to interpreting the results, particular characteristics of the local infant population such as bilingualism are adduced and specific pedagogical methods are taken to be responsible for certain results.

To this point the case presented in this paper seems to be just another example of a teacher doing some testing in a way similar to Los Angeles teachers in Raftery’s case in the 1920s (Raftery, 1988). But there are some striking differences between both cases, with regard to the context and with regard to Cabós’ activity itself.

Due to several reasons psychology in Spain was very weakly institutionalized. With few exceptions like the teachers college (*Escuela de Estudios Superiores de Magisterio*) or the Psychotechnical Institute, there were nearly no systematic training programs neither for philosophers or physicians nor for pedagogues or teachers. Also the child sciences did not live such a successful institutionalization process through the foundation of research centers and organizations like it was the case in the United States. The national crisis which led to regeneration initiatives embraced after 1900 a comprehensive engagement with international child research (Kössler, 2012). But instead of a centralized

and systematic wide-range “top-down” testing we are here facing a singular forerunner, who was drawn by his amateur interest and self-taught effort to experiment with mental testing. Barcelona City Hall gladly supported this initiative because it fit well in their modernizing policy and the interest in psychological science by part of some of the members of the culture commission.

Neither pedagogical psychology, in general, nor Cabós, as initiator, did produce in Spain any kind of efficient, wide-ranging testing program like Terman’s. We deal here with a very particular and rather sporadic initiative which achieved only a limited impact. Rivera’s Regime would shortly after impose new centralized political scenery opposing regional Catalan interests. Nevertheless, Cabós’ case seems interesting on a qualitative historiographic level, because it visualizes a completely unknown effort and gives an insight into a special innovative kind of psychological activity that was present in the Catalan public school in the early nineteen twenties.

The discussion about the use and reliability of the mental tests and the continuous production of new versions enforced the idea of psychological tests as a malleable method, interfering in the standardization and black-boxing of the psychological instrument. It therefore enhanced a relatively flexible and free appropriation process of the psychological instrument, even in the hands of an amateur like Cabós. The tests were adapted by local testers through a variety of modifications such as translation into the local language (in this case Catalan), manual construction of the accessories, altering the order of the tasks and even developing new test items. He developed new ways of measuring three-dimensional space perception proposed as innovative test item for the measurement of intelligence.

Historians like Chapman (1988) have argued that test scores were instrumental in the sorting of children in schools. Occasionally this also may have been the case at some graded schools, in Spain. However,

neither the sorting out of abnormal or foreign children, nor grading, seemed to have been a pressing urge in the Spanish school system at that time. Cabós' reports show that much more than sorting and grading, his individual sessions assessing children's intellectual capacities were in tune with his agenda of an individualized pedagogy. While schooling became more generalized, tests were seen as providing a suitable basis for daily educational practice in an attempt to counteract the mass influx of pupils. The "psychological screening", was expected to help improve his "pedagogical art". To what extent the daily educational practice was really influenced or changed by the testing process is difficult to know (some historians like Trone (1999) are rather pessimistic).

The harsh social and political tensions in Barcelona during the first decades of the 20<sup>th</sup> century conditioned the discussions about education and the establishment of rivaling school systems and pedagogies. Cabós' background was the "rationalist pedagogy" linked to the anarchist and neo-Malthusianist movements. Although he afterwards worked at a public elementary school, we argue in our paper that he used psychology and mental testing as a way to offer "first-class" personalized pedagogy to the non-privileged children attending public schools. Instead of criticizing psychological tests as "class-biased" (Ryan, 2011), it seems that he wanted to use them to make disadvantaged children fitter for the hard life of Spanish urban society, shaken by an explosive class struggle.

In a society where public schooling spread with great difficulty, competing with different private schools, it made a great deal of sense to demonstrate publicly the excellent intellectual level of working-class children attending public primary graded schools. Thus, the numerical results were celebrated by Cabós and his contemporaries as purely objective science and comparisons were turned into authoritarian "apolitical" judges of different styles of instruction and school systems.

Similar kinds of comparison were also undertaken in Madrid, studies in which an alarming pessimist picture of the Spanish infantile

mental capacities emerged. But here we have a different case. In this game of numbers, Cabós felt like a winner: he could proudly show the superior numbers he obtained through the application of the Yerkes, Bridges and Hardwick scale with regard to the scores obtained by the North-American authors with their children. It seems that his most powerful political and pedagogical argument was not decoded into words, but consisted of “objective facts” displayed in a table; a kind of “truth” acclaiming the intellectual and social value of the infantile working-class mind and the efficiency of public graded primary schooling in Barcelona.

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