

Revisiting Ideas of Assessment through the Work of Alfred Binet

Rachel Philip

Department of Education, University of Delhi, Delhi-110016, India

ABSTRACT

This paper examines the work of Alfred Binet, best known for the invention of the Intelligence Quotient (IQ) scale with respect to his ideas on the assessment of various attributes of children. This exploration is anchored in an analysis of his final work 'Modern Ideas of Children', published in 1911 and which was a review of thirty years of his own experimental work in this area. His understanding of 'modernity' in the field of pedagogical sciences was tied to a faith in the application of the scientific method (systematic observation, measurement and experimentation) to reveal the 'real' nature of human beings. This is reflected in his consistent engagement with the question of what aspects of a child's being are measurable and under what conditions. In his perspective the teacher had to play a critical role in the assessment of a student's potential and his work was an attempt to demonstrate how the teacher could use the scientific method within the context of the classroom to improve his or her pedagogy. Equipped with the right diagnostic tools and methods, he envisioned the teacher as playing an important role in ameliorating social problems such as poverty. These insights continue to be relevant a century after the first publication of Binet's work.

Keywords: Intelligence Testing, Assessment, Pedagogy, Alfred Binet

Published 100 years ago in 1911, *Modern Ideas about Children* was its author Alfred Binet's last work and in his own words, represented 'a review... of thirty years of experimental work' (1975: 17)¹. It is a fitting book to begin an engagement with Binet, who is almost exclusively remembered for his scale for the

measurement of intelligence and to discover in it almost as it were an 'other Alfred Binet', a polymath who generated 'numerous fascinating investigations into developmental, experimental, educational and social psychology' (Siegler, 1992), which echo current concerns and research work.

This paper first situates the work and writing of Binet in the context of late nineteenth century France, and then provides a brief overview of the contents of *Modern Ideas about Children*. It concludes with some reflections on Binet's social vision and its translation into a concern for accurate measurement of various aspects of a child's being.

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Address for correspondence

Department of Education, University of Delhi, Delhi-110016, India

E-mail: p.s.rachel@gmail.com

Reading Binet in Context-1890-1910

Binet's use of the word 'modern' as an adjective in his title, *Modern Ideas About Children*, reflects how he positions his work. On reading the book, one realizes that this is not a usage which reflects historicity, but rather a 'quality' that accrues to the 'ideas about children' by virtue of the particular methods through which this knowledge is obtained. In this sense, 'modern' ideas are contrasted with the 'traditional' ideas about children which are based on an inherited stock of knowledge, experience or intuition (especially possessed by parents and teachers). In contrast, 'modern ideas' are characterized by a faith in the application of the scientific method (systematic observation, measurement and experimentation that undergird the formulation, testing and modification of hypotheses) to reveal the 'real' nature of human beings. At the same time, this knowledge is not treated as an end in itself, but is presented as invaluable in understanding and solving problems of social order².

Binet's pre-occupation with 'modern ideas about children' may be historically contextualized in a number of ways. For one, the eighteenth and nineteenth centuries in Europe witnessed a conceptual shift in the understanding of the 'child' and the period of life that is 'childhood'. One of the main reasons was the influential ideas of French Philosopher Jean Jacques Rousseau (1712-1778) and educationalists such as Johann Pestalozzi (1746-1827) and Friedrich Froebel (1782-1852), who promoted romantic idealizations of childhood as a period of life marked by protective nurture and the importance of the educational system promoting opportunities for free play and exploration (Pols, 2008). These ideas were bolstered by a discourse of the importance of protecting 'children' as a result of popular struggles for welfare waged by the working classes in response to the deterioration of the quality of their life due to the changes wrought by the Industrial Revolution. Additionally, the contribution made by scientific discoveries during the same period enabled these societies to control infant mortality, improve public hygiene and sanitation and eradicate certain common illnesses (Kumar, 2006). These provided impetus for conceptualizing the educational system as a promising avenue to improve the conditions of children

and to create a more just and better society. Over the course of the nineteenth century, Europe witnessed the emergence of state controlled compulsory schooling systems, which primarily through formal legislation, replaced or incorporated and expanded the existing private or religious provision of education (Soysal & Strang, 1989).

During those last two decades of the century, traditional philosophically oriented approaches as methods for reflecting on the aims, processes and ends of education were sidelined by attempts to apply the methods of modern science to the investigation of children. New sciences of the child and his education that prioritized the use of experimental methods (such as the child study movement, paedology and experimental pedagogy) sought to discover the laws of normal child development which would lead to a rationalization of the processes of education (Depaepe, 1998; Carson, 2007).

Binet's auto didactic foray into research on children had occurred in tandem with this movement in academic circles, beginning with a close observation and research on the development of his daughters and his work with the education of mentally retarded children along with Dr. Simon in the 1890s. From 1898, he had been associated with the French Society for the Psychological Study of the Child. In 1904, Binet and Simon brought about the establishment of a ministerial commission to examine two problems related to the large influx of pupils into public schools (post the Jules Ferry Laws (1881-82) that made education compulsory for all children between the ages of six to thirteen): the diagnosis of different degrees of mental retardation and the education of abnormal children. The demands of solving these issues led to Binet and Simon formulating the first version of the Scale for the Measurement of Intelligence within six months of their appointment. They continually revised the test over the next six years, even adding an adult level to it based on a study of several dozen Army recruits done between 1909-1910. In 1905, Binet established an experimental educational laboratory (a school based research centre in the working class neighbourhood of Belleville in Paris) to attempt more sustained research on the problems that emerge in the context of schooling. (Zazzo, 1993).

Modern Ideas About Children draws on this wealth of Binet's pioneering anthropological and psychological studies of children and schooling, which as Sussane Heisler describes the preface to her translation, as one which sought to understand them as 'unique [beings] both from the physical and intellectual [points of view]', rather than homunculi (Binet, 1984).

An overview of the Book

Binet contextualizes his educational concerns in his larger social vision that the *raison d'être* of schools was 'to prepare students for life' (*Ibid.* 28). The first two chapters, 'The Purpose of this Book' and 'The Child in School' expand on this theme of the necessity for a study of child psychology preceding the kind of teaching that he receives, so the child's experiences in school are relevant to his or her needs and abilities. The teacher who is genuinely interested in his/her pupils and thus committed to acquiring knowledge about them so that their needs will anchor his/her pedagogy, is indispensable in this enterprise. But the teacher had to move beyond being a pedagogue to an 'observer' and this was a 'new role', which presupposed 'a new way of thinking' and required 'a new kind of training' (*Ibid.* 25), which would be organized around providing student teachers with practical experience in the 'pedagogy or psychology of individual differences...which would enable them to study a child's mental characteristics and to identify the methods to be applied to him'.

Modern Ideas about Children is presented as a step in this direction, providing 'pedagogical consultations given by specialists as examples for teaching' (*Ibid.* 26). These examples are tied to specific areas of inquiry regarding the child (general health, vision, audition, intelligence, memory, aptitudes, laziness/moral character) and comprise the rest of the chapters of the book. Binet describes two cardinal principles which his team followed when designing experiments to garner information in these areas. Firstly, the test or exercises which were to be applied to the children were to be structured along a graded level of difficulty and its contents were to be unvarying or standardized. Secondly, during the process of analysis of results, a child's achievement was to be compared to the average level of children of the

same age and same socio-economic background, who attended the same school.

The chapters 'The Child's Body' and 'Vision and Audition' highlight the importance of learning about the state of a child's health, especially as it affects a child's capacity to learn. Since the teacher spends much more time with the pupils, the importance of a partnership between the school physician and the teacher is stressed, particularly for the benefit of children from the poorest socio-economic classes, whose stunted physical and intellectual development is traced as an aspect of their social conditions of existence.

Binet uses the chapter on 'Intelligence' to demonstrate one of his team's key insights that intelligence was not a fixed entity, but one that evolved, specifically in correlation to the age of the individual³ and the kind of training that one underwent. Binet argues that it is impossible to construct a testing instrument which could accurately quantify intelligence, such as a single subtest which when passed gave the assurance that all preceding tests were passed and all the more advanced ones failed. The value of the scale to measure intelligence lay in its ability to provide information to the teacher, which would help him or her to adjust teaching to the level of a student's understanding. Holding that intelligence could be increased through training, he offers detailed descriptions of exercises in 'mental orthopedics' through which his team enabled intellectually 'retarded' children 'how to learn'.⁴

The succeeding chapter correlates memory with intelligence, as the aspect which 'gives it richness, bulk, quantity as if multiplying the products of intelligence' (*Ibid.* 120). As in the case of intelligence, Binet holds that the memory is educable through suitable training. However, its protean character must be recognized in the process, such as its tendency to be influenced by imagination, thereby often changing the object or situation originally perceived. It is often partial because of several reasons like the nature of the object and the interest it arouses in the person, the procedures of memorization or the difference in the manner persons ideate. All these factors influence the way memory bears upon the learning process of a child.

In the chapter on 'Aptitudes', Binet holds that the success and relevance of pedagogy rests on how far the teacher is able to develop the productive capacities of his pupils. He believed that the aptitudes of individuals must be the prime consideration in the choosing of careers, if indeed, children must mature into content and productive citizens. A note of caution that he injects in this context is that pedagogical evaluations of children must also be cognizant that aptitudes are prone to change⁵, considering the immense fertility of the human mind.

Having explored physiological and intellectual reasons for why children may not learn successfully in school, Binet uses the penultimate chapter 'Laziness/Moral Education' to address the important question of whether such failure is an attribute of a deficient moral character i.e. the child refuses to take moral responsibility for his work and actions in school. Laziness in this perspective is one such manifestation. Considering the kind of educative programme which can address this, Binet notes that moral education which successfully modifies an individual's conduct and forms moral habits, cannot be created through mere ideas. Rather, it builds upon the child's moral tendency, which is traced to two factors: the respect they have for their parents and teachers and secondly, altruism (kindness, charity, sympathy, affection and unselfishness). Therefore, in the classroom context, the most effective attempts to form moral habits in students are by teachers who draw their moral authority from their own character and who set an example as well as create contexts for students to exercise their moral agency and take responsibility for their actions.

The last chapter which is the conclusion of the book reiterates the question with which it began: Can the introduction of experimental and rigorously scientific research in pedagogy benefit pedagogy itself? Writing in the context of a great deal of faith in psychological testing, Binet concludes by valorizing a grounded approach which devises psychological tests and measures, not in the esoteric isolation of laboratories, but rather in response to the real needs of schools.

Conclusion: Some Reflections for our times

I wish to take up two aspects of *Modern Ideas about Children* for close consideration. The first is the nature of the underlying vision in the book and the second is how it is translated into the means and goals of 'measurement' which Binet advocated for educators, particularly as it applies to higher order cognitive processes in children.

To begin with the first aspect, *Modern Ideas about Children* seems to be an investigation into the various reasons why children may be unable to benefit from schooling experiences. But the focus of the investigation is specifically on factors that seem to be innate to a child such as the state of health, intelligence, memory, aptitudes and character (though Binet does correlate some of these aspects to the socio-economic background). In this focus, institutional aspects which may part of the reason why children fail such as a limited or irrelevant curriculum, poor physical infrastructure of the school, the medium of instruction etc. don't come into the picture. While Binet does not apportion blame for failure to the child and urges that a child's background must be factored into any analysis of his performance, it is easy to see how the absence of a holistic perspective (which takes the educational objectives of the system into account) may lead to a rationalization of children's failure based on their abilities alone.

Binet's perspectives on the failure of students and recommendations for them benefit from schooling *prima facie* appear to be humanist and progressive. Indeed, Binet himself writes of his admiration for educational reformers like John Dewey in *Modern Ideas about Children*. However, the vision which underlies the work is not one of social transformation, but rather one of conservatism. This paradox is not unique to Binet alone. Robert Nisbet (1966) notes the influence of French Conservatives (Bonald, de Maistre, Chateaubriand) on social thought in the nineteenth century, which prioritized the absolute reality of the institutional order bequeathed by history, was discernible in the works of thinkers like Saint Simon, Comte, Le Play and even Durkheim, Binet's contemporary. Binet repeatedly emphasizes the importance of his tests and experiments in rationalizing social organization. For example, a recurrent theme in

the book is the importance of the discovery of the real aptitudes of children, the calibration of pedagogy to their needs and encouraging children to pursue careers in line with aptitudes. As he puts it, 'it is a known fact that if we took this precaution, we would decrease the number of declassed and discontented individuals; by putting everyone in his appropriate place, [it would be possible] to increase people's economic output, and this would probably be one of the simplest, the most natural, the best means of at least partially solving some of the irritating social problems which are on so many minds and which threaten the future of our present society' (Binet, 1984:167).

Keeping Binet's conservative tendencies in mind allows us to contextualize the importance that he attributes to the collaboration with and training of teachers in *Modern Ideas about Children*, considering them as the most important players in the education of children apart from their immediate family and therefore, vital contributors to the pursuit of knowledge on children. Teachers are consistently portrayed as actors in their own right, rather than just enactors of the advice of 'experts'. To take an example, in the chapter on 'The Child's Body', regarding the degraded health of students from underprivileged homes, Binet notes that 'using such modest instruments such as a scale and a measuring apparatus and making a few calculations which appear to be elementary, almost useless, the educator finds himself in the presence of the most alarming social problem of [the] times. Such problems are not his to solve; they are beyond the scope of school and pedagogy. But he must insistently bring them to the attention of public authorities. Also, to the extent that he plays a role in the distribution of the free food and clothing available, he must see to it that this help is given to the children who need it most' (*Ibid.* 55). In Binet's vision, the teacher is not an agent of social transformation as much as one who with the right diagnostic tools and methods can contribute in ameliorating social problems such as poverty.

This brings us to the second related aspect of *Modern Ideas about children* which I wish to highlight, i.e. the consistent engagement with the question of what aspects of a child's being are measurable. Binet even toys with the question of whether one can devise tests

which can enable one to resolve questions of character, i.e. whether one can objectively prove if one child is more lazy than another. Yet the manner in which the issue of measurement is approached is a nuanced one. Indeed, Binet was working and writing in the varied legacy of philosophers, psychologists, anthropologists and other scientists (from Kant to his contemporary scientists like Hermann Ebbinghaus, Francis Galton and Theodule Ribot) who engaged with the issue of whether mental processes can be measured and if so, what aspects. In such a context, Binet's breakthrough conception regarding the measurement of higher cognitive processes was that such measurement is not and cannot be absolute. Rather it is always a system of ranking. Writing about the measurement of intelligence, Binet notes 'As in relation to instruction and physical development, the word 'measurement' is not used here in its mathematical sense; it does not indicate the number of times a quantity is contained in another. For us, the idea of measurement is closer to the idea of hierarchical classification. The more intelligent of two children is the one whose performance is better on a certain kind of test' (1984:102). What constituted 'better performance' was in turn dependent on the nature of analysis. Stressing the importance of examining results in the context in which the test was applied and the history of the child, he stressed that his measurement scale was not like 'a weighing machine in a station which prints out your weight on a ticket' (cited in Razzo, 1993).

In line with the positivist ethos of his time, however, there is no perspective in the book about how the testing tool itself is an object, shaped and influenced by a particular culture and history. Highlighting this absence is important because as Demetriou and Papadopoulos (2004) point out, testing of faculties like intelligence appeared (and still appears) for practical reasons, unlike the development of the first theories of intelligence which were motivated by intellectual reasons i.e. to explain how humans think, how they understand the world and adapt to it. The extraordinary social changes of the late nineteenth century-political upheavals in the case of France, socio-cultural transformations in the US particularly due to immigration etc, opened up new spaces in these countries for new methods

of understanding and evaluating humans and their behavior (Carson, 2007). Particularly in Binet's case, the test of intelligence emerged in the context of a ministerial commission which sought to rationalize the distribution of educational opportunities. In the light of the turn of the twentieth century concern of French technocrats to broaden the ambit of secular education, Binet's work contributed to the state's attempt to exert a more legitimate and seemingly benevolent control over education. In a sense, it typified the emergence of new secular governing principles, deriving from the social sciences (Garrison, 2009).

The manner in which Binet's test was deployed in various contexts is also a manifestation of the same. For example, John Carson (2007) compares the American versus the French reception of Binet's test. He notes that in America, the test and its later manifestations were used to signify an inherently egalitarian and objective method, which constructed a 'natural' object to be measured i.e. intelligence. Since members of privileged socio-economic groups generally scored well on intelligence tests, the concept of 'intelligence' contributed to the preservation of the American social hierarchy while allowing room for exceptional members of historically marginalized groups. In France, by contrast, the educational system was the primary gatekeeper for entrance into the technocratic elite. Intelligence tests and the institutional and cultural roles of such identification retained Binet and Simon's original intent, as being associated with the identification of the mentally deficient rather than the skilled well into the 1930s. Intelligence itself was regarded as multiple and relevant to individual self understanding, rather a unitary category into which mental difference could be collapsed as in the American case.

End Notes

1. The proviso of 'experimental work in education' is important with regard to Binet because his educational and professional resume covers an immense diversity of academic interests ranging from law, medicine, anatomy, histology, botany, zoology, clinical psychiatry and psychology in addition to his work as an art critic and dramatist.
2. According to Binet 'How much hardship, how many disappointments would be avoided if the teacher could

discretely inform each student of his abilities and guide him toward a road that he could follow without peril! There would be fewer failures, fewer discontents, fewer revolutionaries and above all, mortality would be lower' (ibid. 51).

3. Previous tests conducted by psychologists tended to distinguish individuals on sensory stimuli and their reaction times to it as indicators of intelligence. The necessity of devising a way to understand the nature of a child's performance in school triggered Binet's break through in conceptualizing higher order mental processes and complex psychological phenomena (Rene Zazzo, 1993).
4. 'Mental orthopaedics' included activities to straighten, cultivate, fortify such mental abilities such as attention, memory, perception, judgement and the will. Attention to these aspects improved their overall intelligence.
5. Having seen his children's tendencies in ideation differ so diametrically in youth, Binet records his surprise in Armande's decision to pursue a particularly realistic form of painting which required very close observation, as opposed to what he expected would be her forte, i.e. 'a kind of psychological painting, by which I mean the painting of what is felt rather than a representation of what is seen'.

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