

# PROBLEMS IN THE EDUCATION OF VISUALLY HANDICAPPED CHILDREN

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## PREFACE

THE material contained in this book was presented originally to the Faculty of the Graduate School of Education, Harvard University, as a thesis in partial fulfilment of the requirements for the degree of Doctor of Education in March, 1932.

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blind girls learning to skate. Thanks also are due to Professor Bertha K. Duncan of the Texas State College for Women who permitted the writer to read her unpublished manuscript on the maze-learning ability of the blind, and to the American Foundation for the Blind, Inc., New York, for its courtesy in loaning the unpublished reports of the sub-committee on the visually handicapped, 1930 White House Conference on Child Health and Protection. Finally, the writer wishes to thank his wife, Dr. Frieda Kiefer Merry, for her untiring assistance in reading and rereading the drafts, checking references, and making many helpful criticisms.

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## CHAPTER I

### PRELIMINARY CONSIDERATIONS

*Nature and Scope of the Present Study.*—The systematic education of visually handicapped children in the United States is now entering upon its second century and it seems an opportune time, therefore, to attempt an evaluation of what has been accomplished and to indicate some of the problems which as yet are unsolved. The present study is intended to perform these functions, in so far as it is possible, with regard to the elementary education of blind and partially seeing children. It is not, primarily, an historical study, but in order to supply a background for the discussion of various problems considerable historical material is included. The following chapter presents a brief summary of the evolution of educational facilities for visually handicapped children, and in subsequent chapters such historical facts are included as will promote a clearer understanding of the problems under consideration.

The policy of discussing both blind and partially seeing children in the same chapters, which has been followed generally, may be objected to by some leaders engaged in sight-saving work. In a treatise concerned with pedagogical methods and devices this objection probably would be justified, but in the present study, which deals with broad educational issues, there seems to be no valid reason why the problems of blind and partially seeing children cannot be treated together, especially since this saves considerable repetition.

The topics discussed herein are principally those concerned with pre-school, kindergarten, and elementary education, although the serious academic retardation of visually handicapped children generally makes it necessary to include certain problems, such as those of adolescence, which ordinarily would belong in the secondary field. Problems arising in connection with the secondary and higher education, and vocational training of the visually handicapped are, in themselves, of sufficient importance to merit separate treat-



ment and cannot be dealt with adequately within the limits of the present study.

In formulating and discussing problems in the elementary education of visually handicapped children, the aim is to introduce material of as objective a nature as possible, excluding that which obviously results from prejudice or emotionalism. A surprising amount of literature has accumulated during the past century, but, unfortunately, much of it is of doubtful scientific value, especially that dealing with the education of blind children. Nor is the distinction between "literature of fact" and "literature of opinion" made by some writers, a sufficient basis for judging the value of material in this field. Sound opinion, founded upon many years of experience and unprejudiced observation, certainly is preferable to incomplete experimental data obtained by individuals lacking adequate training and experience. While as many reliable experimental data as possible are included in this study, sound observational and opinionative literature, also, are employed.

It is hoped that the annotated bibliography which is appended will prove helpful to students and teachers interested in this particular phase of special education. While many bibliographies have been published, none appears to have been annotated, and since in some of these considerable repetition and worthless material are included, this lack of discrimination has wasted the time and diminished the interest of those desiring to study the visually handicapped. The titles included in this bibliography are chosen not only because they are representative of the problems considered, but also because of their availability. Much of the literature concerning the visually handicapped is widely scattered and relatively inaccessible to the average student or teacher; therefore, unless such references are of particular value, they are not included in the bibliography of this book, but are summarized as completely as possible at the point where they are introduced into the general text. Only a few foreign titles are mentioned, which are easily available and contribute directly to the discussion.

The aim of the present study is to formulate and discuss fundamental problems relating to the education of visually handicapped children and to point out those places where

further knowledge is required. In some instances specific suggestions for experimentation are made, not with the idea of presenting finished and complete research techniques, but rather of stimulating research workers to attempt such investigations. No final solutions for any problems are offered, but tentative conclusions are drawn from available facts, and suggestions for changes and improvements in certain existing practices are proposed. Throughout the study a comparison is made between the principles and theories underlying the education of the visually handicapped and those now most commonly accepted in the field of general education. It is hoped, thus, to show the difference in rate of progress between these two branches of education, and to point out the need for revision of the aims and theories governing the former.

The immediate purposes of this study, therefore, are:

(1) To clear the ground for further research and progress in the elementary education of visually handicapped children, pointing out the most fundamental problems requiring solution, and offering suggestions for their investigation;

(2) To assist teachers of visually handicapped children to clarify their educational theories and objectives; and

(3) To interest research workers from the field of general education in the study of problems peculiar to the visually handicapped.

*Definitions.*—"The term *blindness*," says Baldwin,<sup>1</sup> "is a most general one designating any distinct lack of power to respond to the stimuli which give rise to vision. It may be partial or total, and may be due to injuries or deficiencies in any part of the optical mechanism, accessory to the retina, in the retina itself, in the optic nerve, in the cortical or sub-cortical centers for vision or in the connections between these." Other less technical definitions of blindness have been formulated, e.g., "vision from about one-third to one-tenth of normal with the best glasses obtainable,"<sup>2</sup>

<sup>1</sup> Baldwin, J. M., *Dictionary of Philosophy and Psychology*, I. Macmillan Company, New York, 1901, p. 122.

<sup>2</sup> Consult page 6 of "Report of the Massachusetts Commission for the Blind on the Condition and Education of Persons with Seriously Defective Eyesight" (House Bill No. 2145), *Outlook for the Blind*, VIII, Summer, 1914.

“sight worse than 3/60,”<sup>3</sup> and “the inability to count fingers at one foot.”<sup>4</sup>

In deciding whether or not an individual is blind, factors other than his actual amount of vision should be taken into account. Thus, economic blindness may not represent the same degree of visual acuity as educational blindness. The former includes those whose vision is too defective to allow them to perform work for which eyesight is essential,<sup>5</sup> while the latter applies to children who cannot use their eyes for educational purposes. Obviously, there may be wide differences in the amount of sight required in certain industrial occupations and that necessary for the ordinary process of education. Thus, a child who may not be considered blind educationally may be so regarded industrially. Since the present discussion is concerned with the education of visually handicapped children rather than with their economic status, it is necessary only to establish educational definitions of the terms *blind* and *partially seeing*.

In 1928 a special committee of the American Association of Instructors of the Blind, which had been appointed to formulate a satisfactory definition of blindness for educational purposes, favored that employed by the United States Census Bureau, viz., “A blind person is one who cannot see to read a book or other printed matter even with the aid of glasses.”<sup>6</sup> This definition appears to be fairly satisfactory and coincides quite closely with that used by the Committee on the Visually Handicapped of the 1930 White House Conference, viz., a blind child is “one who cannot use his eyes for education.”<sup>7</sup>

The difference between blindness and partial vision is not always easy to distinguish,<sup>8</sup> since types of ocular defects and

<sup>3</sup> Anon., “Blindness: Border-Line Cases,” *The Beacon*, XI, February, 1927, p. 15.

<sup>4</sup> Robinson, E. B. T., *True Sphere of Blind*, William Briggs, Publisher, Toronto, 1896, p. 15.

<sup>5</sup> Anon., *The Beacon*, XI, June, 1927, pp. 3-4.

<sup>6</sup> “Report of Committee on Definition of Blindness,” *A. A. I. B. Proceedings*, 1928, p. 433.

<sup>7</sup> Committee on the Physically and Mentally Handicapped, Section IV B, Sub-Committee on the Visually Handicapped, *White House Conference on Child Health and Protection*, p. 1.

<sup>8</sup> Consult Appendix 3 (relative to the definitions of blindness in different countries), League of Nations Health Organization, *Report on the Welfare of the Blind in Various Countries*, pp. 84-90.

other factors have to be considered. For example, a child possessing considerable vision but who is destined to lose his sight despite the best ophthalmological care might better be educated in a school for the blind rather than in a sight-saving class. In general, visual acuity of 20/200 (as measured by the Snellen Chart<sup>9</sup>) seems to represent the dividing line between the blind and the partially seeing, while vision of 20/70 divides sight-saving class pupils from those who can be educated in the regular grades. In this connection Wood says:<sup>10</sup>

In general, with the exception of children suffering from progressive eye troubles, children with 20/70 vision or over, in the better eye after correction or treatment, can usually carry on their work profitably in the regular grade. Children with 20/200 vision or less after correction or treatment, are considered blind and should be educated as finger readers in a school or class for the blind.

Children falling between these two extremes plus all children with progressive eye troubles should be considered potential candidates for sight-saving classes. Although it is wise to have certain standards of admission, each child must be given individual consideration.

The impression should not be gained, however, that the distinctions between blind, partially seeing, and visually normal children outlined by Wood are followed generally in actual practice. Ophthalmological standards for admission to sight-saving classes vary widely in different communities, and this lack of uniformity recently has received sharp criticism.<sup>11</sup> As will be seen in a subsequent chapter, also, many pupils in schools for the blind possess far too much vision to be educated by means of tactual methods.

<sup>9</sup>The Snellen Chart consists of definitely graduated letters or groups of letters which should be read by the normal eye at distances varying from 10 to 200 feet. If an individual can read the 20-foot line at a distance of 20 feet, his visual acuity is considered normal, and is written 20/20. If, however, he can read only the 70-foot line at a distance of 20 feet, his visual acuity is rated 20/70, and if he can read only the 200-foot line at 20 feet, it is 20/200. Although written in the form of a fraction, these figures do *not* represent fractional values. Thus 20/20 is equivalent to 100 per cent visual efficiency; 20/30 equals 91.5 per cent; 20/40 equals 83.6 per cent; 20/50 equals 76.5 per cent; 20/70 equals 64 per cent; 20/100 equals 48.9 per cent, and 20/200 equals 20 per cent. Consult: "The Partially Seeing," *Special Education: The Handicapped and the Gifted*, p. 129.

<sup>10</sup>Wood, Thomas D., *Conserving the Sight of School Children*, p. 48.

<sup>11</sup>Wallin, J. E. W., "The Ratio of Candidates for Sight Conservation Classes," *School and Society*, XXXIII, January 10, 1931, pp. 66-67.

Despite this general lack of uniformity, however, it is necessary for the sake of clarity to attach fairly definite meaning to the terms *blind* and *partially seeing*. Throughout the present study, therefore, a blind child is considered as one whose vision, after correction, is insufficient to permit him to be educated by visual methods, while a partially seeing child is considered as one whose vision is too defective to allow him to be educated satisfactorily and with safety in the regular school grades, but who can make use of specially adapted visual methods. Although no rigid line of separation can be drawn between these two groups, the point where visual education ends and tactual education begins appears to be as suitable a basis for division as any other, especially from an educational point of view.

It is realized that no single definition of each group can cover all cases adequately. Exceptions always occur and must be dealt with according to individual requirements. It is believed, nevertheless, that the general definitions herein set up will serve for the majority of children with serious ocular defects, and that they will promote a clear understanding of the problems to be discussed in succeeding chapters.

*Incidence of Visual Defects in the School Population.*—The incidence of serious visual handicaps among school children in the United States is somewhat difficult to determine accurately. It is a comparatively simple matter, of course, to ascertain the number of pupils enrolled in residential institutions and public day-school classes, but there is good reason to believe that only a relatively small proportion of the total number of these children is receiving instruction under the above-mentioned auspices. Census returns have not proved to be a very reliable basis for estimating the incidence of blindness among children, since parents frequently feel that it is a disgrace to admit that such a child is a member of their family, and fail to report him to the enumerator. It also should be borne in mind that visual defects are much more common among individuals of advanced years<sup>12</sup> than they are among children.

The most recent estimates show that there are approximately 14,400 blind children in this country under twenty

<sup>12</sup> Best, Harry, *The Blind*, pp. 9-10.

years of age. Of these, 6,000 are being educated in state, private, or public day schools and classes.<sup>13</sup> These figures include both elementary and secondary pupils, and, although there is no definite information concerning the number of elementary pupils alone, it undoubtedly is considerably smaller. The extremely wide age ranges found in most elementary grades in schools for the blind make it practically impossible to separate elementary from secondary pupils on the basis of age alone. In comparison with the incidence of other physical defects, such as deafness, the incidence of blindness among school children may seem very small. It may be thought that the existence of so few cases does not merit special attention. It should be remembered, however, that large sums of public money are expended annually in this country on the education of children without sight and it is only fair that these funds should be used to the best possible advantage. Furthermore, in a democratic society, the fact that a certain handicapped group is in the minority cannot be advanced as a valid reason for denying to its members opportunities for the best individual and social development of which they are capable.

It has been estimated that there are 50,000 partially seeing children in the United States who should be in sight-saving classes. Less than 5,000 of these, however, are enrolled in such classes.<sup>14</sup> This points to the need for further expansion of sight-saving work, and to the general acceptance of its importance in all cities, towns, and rural areas throughout the country.

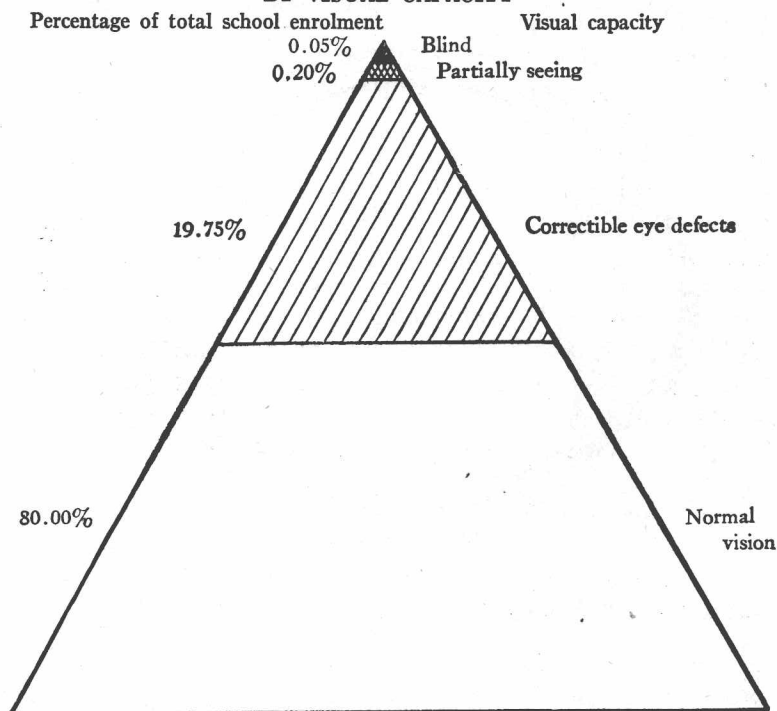
Figure 1 shows approximately the relative number of children with normal vision, those with correctible visual defects, those eligible for sight-saving classes, and those who should be educated in schools and classes for the blind.<sup>15</sup> The section at the base of the triangle represents those school children whose vision is normal; the next section shows those

<sup>13</sup> "Addresses and Abstracts of Committee Reports," *White House Conference on Child Health and Protection*, p. 232.

<sup>14</sup> *Ibid.*, p. 233.

<sup>15</sup> "The Partially Seeing," *Special Education: The Handicapped and the Gifted*, p. 127. This figure is reproduced by courtesy of the White House Conference on Child Health and Protection, and the Century Company.

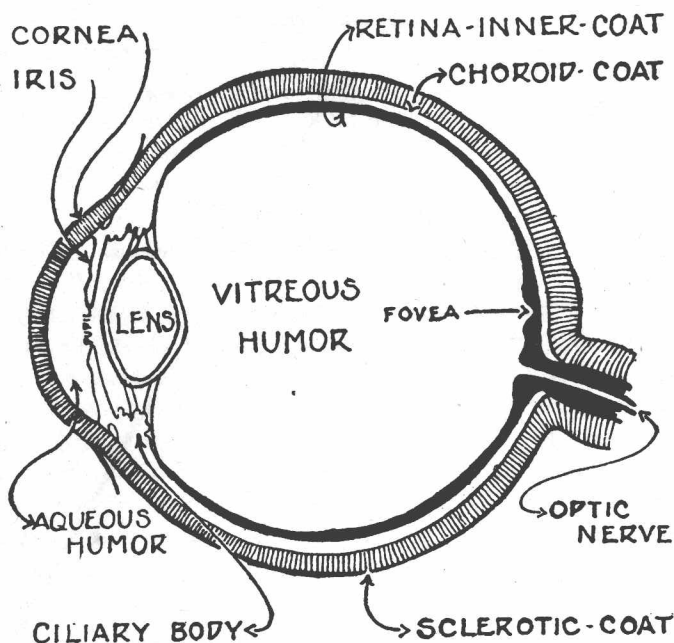
FIGURE 1  
TOTAL SCHOOL ENROLMENT IN THE UNITED STATES CLASSIFIED  
BY VISUAL CAPACITY



children with correctible eye defects; above this is the section which illustrates the number of partially seeing children; and the section at the apex of the triangle represents the number of children who are blind.

This diagram presents a much clearer picture of the incidence of visual handicaps in the school population than can be obtained through comparison of available figures. It emphasizes again the smallness of the number of visually handicapped children as contrasted with the total school population, a fact which should be highly gratifying to educators, medical men, and social workers. Nevertheless, the problems arising with this numerically insignificant group are not to be dismissed lightly, but should receive careful consideration in

FIGURE 2  
THE HUMAN EYE



order to provide the best possible means for these individuals to lessen their handicaps and become normal members of society.

*The Human Eye.*—Before discussing some of the more common visual defects it may be helpful to present a brief, non-technical description of the human eye. This description does not include all structural details, but the facts presented should enable the general reader to gain an intelligent understanding of the visual mechanism. If further information is desired, standard works on ophthalmology should be consulted.<sup>16-18</sup>

The human eye is almost spherical in shape, about one

<sup>16</sup> Posey, William C., *Hygiene of the Eye*, pp. 1-11.

<sup>17</sup> Lewis, F. Park, *What Every One Should Know About Eyes*, pp. 1-7.

<sup>18</sup> Kerr, James, *School Vision and the Myopic Scholar*, Chap. I.



inch in diameter. Its outer covering is a tough protective membrane known as the sclerotic coat. (See Figure 2) At the front of the eyeball this outer covering is modified into a transparent membrane known as the cornea, which also increases slightly in convexity. The middle coat of the eyeball is known as the choroid, which, in front, becomes the iris, a muscular shutter, the back of which contains much pigment. In the center of the iris there is a small hole known as the pupil whose size is regulated by the expansion and contraction of the iris, thus largely controlling the amount of light admitted to the inner eye. Directly behind the pupil is the crystalline lens, of double convex form, composed of a fairly firm jelly-like substance with an outer cover known as the lens capsule. The ciliary body or accommodation muscle makes possible the increase or decrease in the convexity of the lens, the function of which is to focus the image of objects on the retina. The retina lines the posterior two thirds of the eyeball; it is an expansion of the optic nerve from the point where this nerve enters the eyeball. A two-millimeter area of the retina at the extreme back portion of the eye and directly opposite the center of the cornea is known as the macula, or reading area. The fovea, a half-millimeter depression at the center of the macula, is the area of clearest vision. Under normal conditions, therefore, the crystalline lens so adjusts itself as to bring the image upon the fovea. The point where the optic nerve enters is known as the disc or blind spot, since no reflection falling on that particular point will be perceived visually. The presence of an image upon the retina produces certain chemical changes which stimulate the optic nerve, and this stimulus is carried to the visual centers in the brain. The inside portion of the eyeball, between the cornea and the iris, is known as the anterior chamber and is filled with a liquid called the aqueous humor. The space behind the iris, between it and the lens and ciliary ligaments, is known as the posterior chamber. It also contains aqueous fluid. The interior of the eyeball, back of the lens, is filled with a thick jelly-like fluid known as the vitreous.

The eyeball is set deeply into the skull, only the frontal