TESTING RESULTS IN THE INFANT SCHOOL

by

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METHUEN & CO. LTD. LONDON

36 Essex Street, Strand, W.C.2

First published in 1942

PRINTED IN GREAT BRITAIN

FOREWORD

HAVING had the privilege of following the early stages of Miss Gardner's inquiry into the tested effects of different modes of education in the Infant School, I awaited her final results with eager interest. And I will not deny that they surprised me—most agreeably!

My own and other people's experience had left no doubt that any such objective tests under proper conditions, comparing the achievements of children who were allowed to move and talk and play together with those who were mostly made to sit still and listen, would show solid and lasting gains by the former group *in many respects*. But it was far from certain that these gains would be enough to count, or would even appear, in all directions. It was quite possible that children taught on narrower and more formal lines would get ahead more rapidly in certain respects than those whose broader interests and natural modes of learning were given scope. We knew that children allowed to be active and companionable would prove more lively and inquiring, more inventive and enterprising, more resourceful and co-operative than the others. But no one could say *how much more*. And it might be true that those who were persuaded to toe the line would appear to do better in those subjects of formal learning by which the Infant School still so commonly seeks to justify itself.

It is so easy, when attempting to form opinions by simple observation or impressionistic comparisons, to fall into the snare of comparing the best schools with the worst, the best of those which adopt one method with the worst of those which follow another (and this would work either way according to one's prejudices). It was obviously essential that the results of the two educational methods should be studied with children of the same range of intelligence and similar homes and social backgrounds. In any case, there is a world of

difference between general impressions and probabilities and the precise knowledge of measured facts, facts which have been gathered under objective conditions, and with all the proper safeguards of a sound technique of testing and of evaluating data.

Miss Gardner's modesty and reserve in presenting her general conclusions are as evident as her care in preparing the experimental conditions, her ingenuity in devising her tests and her good judgment in applying them.

Her actual results, set forth in Chapters III to VI, and summarized on pp. 144–5, are clear and unequivocal. They show that not even in those matters which they would claim as their own special virtues are the schools where children sit still and listen superior to those where children move and talk and play. The former group do no better in the three R's, or in carrying out a task in handwork neatly and carefully. They are less successful in concentrating on a task which they are asked to do but which is not immediately interesting, and in written compositions (at eight years of age).

I will leave Miss Gardner's pages to tell their own further story. They will convince doubting Thomas. They will encourage and support all those understanding teachers who have long struggled against half-hearted authorities, or battled with adverse buildings and meagre equipment, to meet the true needs of children in the Infant School.

SUSAN ISAACS

Cambridge
December 1941

PREFACE

I WISH to express my warm thanks to Dr. Ll. Wynn Jones, of the University of Leeds, for his help throughout this research, and for the time he so generously spent on calculating the significance of my results, and also to Miss Newcomb, M.A., for sympathetic advice when I have consulted her about this work.

I also thank Dr. Susan Isaacs for a great deal of most valuable advice, and for her warm interest in this work throughout the three years while I was devising and giving tests, as well as in preparing the book for publication.

Among the very many people to whom I am much indebted I wish to mention Dr. Mary MacTaggart and Dr. Schonell for help and advice with the tests in reading and arithmetic; Miss Gwen Chesters and many friends and colleagues who have acted as assessors of results of various tests; Miss Alice Stephen, who undertook the tests in physical training; and my old student, Elizabeth Jenkinson, who gave laborious days to helping me administer and mark the tests, and whose skill with the children and carefully recorded observations have been of the greatest possible assistance.

I also acknowledge gratefully the kindness of the Education Authorities of Leeds, Wakefield, and the West Riding, and the Head Teachers and staff of more than twenty schools, who, despite very difficult conditions at times, never failed to give me every facility for carrying out tests.

Owing to the present shortage of paper and the increased cost of publication, I have found it necessary to omit the tables containing the scores of individual children in the tests. The significance of the result of each test is given, and also the method of calculating the significance, from which it can be seen that no test is claimed to be significant merely on the grounds that a few children's scores are very much higher in one school than in another. Results designated 'significant'

are those in which the superiority of children in one school over another is marked in a large number of cases.

Other material which has been omitted is: (1) the tests in arithmetic, since such tests are easy to obtain or devise; (2) an analysis of the scores of twenty-two children in the Pintner-Cunningham, and forty-eight children in the Alexander test; and (3) a short description of tests which I began to use, but was forced to abandon owing to war-time difficulties.

The full tables of results or any of the above material can be supplied to any research worker who may care to go into them, but for the general reader they are outside the main purpose of this book, and have been omitted in the interests of economy.

Fig. I is reproduced from *Billy Bobtail*, by Alec Buckels, by courtesy of Messrs. Faber and Faber.

D. E. M. G.

January 1942

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CHAPTER I

TWO TYPES OF INFANT SCHOOLS: THE NEED TO STUDY COMPARATIVE RESULTS

LET US imagine that you are visiting two schools, each very good of its kind and staffed by efficient and interested teachers, but using very different methods based upon an important difference of principle.

[1]When you enter the first school, 'A', you find the hall full of children. One characteristic of this school is that the teachers are greedy for space, and use every bit they have to its best advantage. You will hear busy, interested children's voices—'Move that barrow, then we can build this line right round'—'Can I have some of your red paint?'—'Why don't you put a propeller on your aeroplane?' There are the children—building, hammering, sliding, washing; you will have to search for the teacher—she will at first be scarcely visible among her class of forty or more. When you discover her, perhaps she is holding John's nail while he bangs, because every one else is busy and he cannot quite manage on his own; and at the same time, she is turning round to call, 'Mary, that doll does look comfortable, you have made that bed well —everything in the right place'; 'Yes, Ian, the screws are in my cupboard, bottom shelf'; and so on and so forth.

Besides this set of children using the hall, there will be others passing through on all sorts of errands to do with their own affairs. These will be walking, dawdling, running, skipping, according to temperament, but all quite clear about where they are going and why.

You may meet in the corridors a whole class going out to play with brightly coloured balls, ropes, hoops, etc. They will probably be on one side of the corridor, if its width makes

[1] For this description of the schools I am indebted to Elizabeth Jenkinson, who visited them frequently and has recorded the vivid impressions which they made upon her as an interested 'outsider'.

that the sensible thing to do; but they will certainly be walking along easily, in twos and threes, chattering.

If you look through the windows or possibly the open doors of the classrooms, you will see children standing before easels or sitting on the floor painting on large papers with fat brushes, putting dolls to bed, scrubbing tables, polishing handles, moulding clay, making sand-pies, measuring water, hammering wood, serving in shops, sewing stage clothes, building bricks, doing sums, reading to themselves, to each other, or the teacher, writing letters to invite the children in the next class to a play performance, or occupied in many similar pursuits.

A child may be folding up, in order to take home, a very attractive drawing, while one not nearly as good is being pinned on the wall by the teacher as the painter looks on proudly. Another may be writing very carefully and not very tidily the word 'buttercup', which he will then put before a jar so that all may know and recognize the contents, while he sets about finding how to spell and write 'daisy'; whereas a really beautifully written, 'Dear Alan, our rabbit has had some babies. What shall we feed them on?' goes into the recipient's pocket and is never seen again.

Some children sit still some of the time, some sit still none of the time, none sit still most of the time. This recognized right to move about freely means that space is needed; so in these classrooms there is nothing except the things the children need and use, whilst tables and chairs are moved without fuss as and when required. Pictures are hung so that people three feet high can look at and touch them; shelves are low, so that they can fetch and carry the things they need. In short, the school is a child-sized world for children to move and learn in.

The impression made on you cannot fail to be one of purpose. All these children know what they want to do and how to set about it. You get a sense of poise which is confirmed when you ask the way to the headmistress, for as you are taken to her you will almost certainly be entertained by friendly conversation and much information, of a kind which is only given when a child's relations with grown-ups are easy and serene.

Now let us go to the second school, 'B'.

The very first thing you notice, when you go into the hall, is the quiet; no talking, laughing, shouting; at most, a chant from a whole class, reciting a poem or a table. The second thing is the absence of children. Where are they? If there are any in the hall, and there well may not be, since such schools do not need space so urgently—they will be in one group, doing the same thing, and the teacher will be in front of them, striving by word, action, and suggestion, with a very high degree of skill and energy, to influence the forty children before her in the direction she thinks desirable.

Through this hall there will be no stream of purposeful children, but at most an occasional one or two, very probably on some errand for their teacher.

If you meet a class going out, the children will probably have the same attractive-looking apparatus, but they will certainly be in a straight line, and very probably not talking.

As you look through the windows of the other classrooms your first impression cannot fail to be of 'desks' (you will automatically think of them as 'desks', though they may in fact be tables), then of a teacher, and finally of children in the desks. There they will be, children of all ranges of intelligence and temperament, doing sums, or painting, or plasticene or paper-cutting; doing several rather interesting kinds of things, but the members of each class doing the same thing at the same time. The children hardly ever exchange ideas with each other as they work, since in such schools creative thinking is not as important as acquiring skills, such as neat cutting-out, good writing, etc. Talking whilst practising these skills would waste time. It is, therefore, not approved and often, for long periods, is not allowed.

As you pass you will see many lessons given which from the technical point of view are excellent. Many attractive materials will be used. You will not be able to doubt that the teachers are efficient and well-disposed towards the children. But look at the groups of children and see if there is one class, whatever its activity, in which *every* child is interested and using his powers for that activity to his fullest extent!

Also ask yourself if it is likely that this simultaneous interest of a whole class could be aroused by one woman not once, as a result of superb determination, but every day, several times.

You will find your doubts confirmed by the fact that the teacher agrees that the best work always comes from the same relatively small set of children; and you will notice that the drawing, writing, and sums put up on the wall are all 'best' work.

In one class a boy will move from his place. This will be very obvious in a room where every one else is sitting, so comment and inquiry will be made, and unless the child's reason is very good the move will certainly be disapproved. This is not ill-will on the part of the teacher, but a perfectly consistent outcome of the accepted theory. Where skills are imparted directly from teacher to pupil it is necessary that the pupil shall be under the constant and immediate control of the teacher.

You will notice a considerable amount of fidgeting. At regular intervals, rarely more often than once a day, the need for the children to move is recognized by periods for physical training and dancing. It is also informally recognized sometimes by the teacher saying in the middle of a lesson, 'All stand up—stretch—jump high—touch your toes—sit down.' But the very large majority of the children's time, as you can see from studying their time-table, is spent sitting down.

You will find a far greater number of 'naughty' children in this school. This, again, need not show any ill-will towards the children; it is another quite consistent result of the method, which does not allow for a child's most natural means of expression; talking, touching, moving. All these necessarily become undesirable except when they coincide with the teacher's purposes. If you should point this out to the teachers they will probably reply, 'There is a time and place for everything. Of course they can do these things at the proper time.' Or, 'It is good for them to learn to sit still, to be quiet, not to touch.' You will have hit on some attitudes fundamentally different from those in the other school, where the teachers would say, 'It is only good for children to do these

things for a purpose which they appreciate. To sit still so that they can be counted, to be quiet because the new boy has hurt his head, not to touch the rabbit any more because it would like a rest,' for example.

A facet of the relationship between teacher and child in this school is the practice of 'Hands up'. This is necessary where the limits set to a child's movements mean that he cannot simply go up to the teacher and talk to her, but needs and ought to have some means of attracting her attention. So he puts up his hand. This very often comes to be connected in his mind with school and authority, so that should an outsider go into such a school to teach, test, or call the register, and address a child directly, he will, while answering, put up and often keep up his hand.

Note the response in this school when you ask the way to the headmistress. Your question will be answered; but it is unlikely that any extra information will be volunteered, unless you have met one of the school's bright children. You will feel in the child's manner either a complete refusal to make a contact with you, or a certain keenness to estimate what sort of behaviour you want from him and to behave that way. You will conclude that he is a little tense, a little anxious, in his contact with grown-ups.

These schools show such very different pictures because they live out no less different theories of child nature and education.

Both sets of teachers would agree that they would like their children to be happy and sociable, and as intellectually skilled as their intelligence makes possible. The difference of method is due to the fact that the first school accepts the children's impulses to learn through doing and works through these towards its object, whilst the second school ignores these impulses, super-imposes upon them the teacher's purposes, or uses them in the teacher's time and way, not the children's. With so much in common in their aims, both sets of teachers should welcome a critical examination of the results of their method.

DIFFERENT VIEWS OF THE CHILD'S NATURE AND NEEDS

School 'B' is a product of the belief that the young child is a helpless being, very much in need of our direction if he is to learn the skills which will fit him to take his place in our complex society. The teacher therefore is envisaged chiefly as an instructor whose first duty is to maintain order, so that the pupils may be in a suitable condition to receive instruction. She will, if she is a good teacher, be able to maintain order by kindly means, but she has no doubt that her duty is to mould her pupils in the way which she believes to be most desirable for their future welfare. She is sure that the teacher knows better than the child what knowledge and skills he should have at each stage of his development and she will impart these to him by the best teaching technique and devices at her command.

School 'A', on the other hand, is an expression of the belief that the child contains in himself the germs of future goodness and perhaps greatness, and that the purpose of education is to foster growth. The teacher believes that a child provided with an environment varied in content and rich in creative possibilities and watched sympathetically by understanding and skilled teachers will select, at the time when he is ready for it, material through which he can acquire the knowledge and experience he needs.

She believes that her chief function is to watch and provide for the harmonious expansion of the child's powers. She is ready to help him to acquire knowledge and skill, but only as his awakening curiosity and desires lead him to feel the need for them.

To such a teacher the child's spontaneous play is of great importance, and to foster it is one of her chief objects.

THE CHILD'S PLAY AS A MEANS OF EDUCATION

The present situation in Infant School education is one of great interest. I have myself witnessed, in the last twenty years, a steady growth in the acceptance by Infant School

teachers of principles which, whilst not indeed new, were far from widely applied in the Elementary Infant Schools of twenty or even ten years ago. They are still to-day often challenged and even when accepted are yet not fully applied in a large number of Infant Schools.

The principle of educating young children through their spontaneous activity or play is, however, by no means a product of recent times.

Greek education, for instance, recognized the value of children's tendency to play. Plato says in the Seventh Book of *Laws*, 'At three, four, five and six years the childish nature will require play. Children at that age have certain natural modes of amusement which they find out for themselves when they meet. And all children who are between the ages of three and six ought to meet . . . the several families of a village uniting on one spot and the nurses seeing to the children behaving properly . . .'

In the *Republic* also he refers several times to the value of play.

It is impossible in the scope of this book to summarize the recognition of play in the history of education, but both ideas that play is of value in education and that it is inimical, have a long history. Among the advocates of play have been Vittorino da Feltre, Locke, Rousseau, Pestalozzi, Basedow, Richter, and Froebel.

Froebel particularly exerted a strong influence in this country, and although for a time the unfortunate concentration on his 'Gifts and Occupations' imposed a formality on children's play which Froebel never intended, these were gradually discarded and his great principle of 'self activity' began to obtain recognition. In the early days of the Infant School in this country, Robert Owen and to a somewhat lesser degree Samuel Wilderspin both recognized the value of play. The strongest influence on the schools to-day in the direction of education through play is perhaps Professor John Dewey's. He insists on the importance of allowing young children to observe the world around them and to learn by unorganized experience. Dewey's work has influenced the

education not only of children in the Infant School, but of older children also, for the project method is an extension of the play principle to the interests and natural pursuits of older children.

The Report of the Consultative Committee of the Board of Education in 1933 on Infant and Nursery Schools shows clearly that the principle of education based on play is accepted by the authors of the Report. The principle is both directly stated, as (on page 125), 'During the Infant Stage the play way is the best way,' and indirectly implied by advocating playgrounds and gardens, toys and equipment which will encourage play.

The 1937 *Handbook of Suggestions* also refers to the value of play and group activities in the Infant School, as well as in the Nursery School or class.[1]

Psychologists are almost unanimous in advocating play, often in emphatic terms. The various theories of play, too well known to require expansion in the limited space of this study, all emphasize one or more aspects of the value of play. It is advocated as a preparation for life, as an outlet for surplus energy or for strong primitive emotions which are denied expression in our socialized environment, as rest and recreation, as an opportunity to acquire rapidly experiences which the race took thousands of years to undergo, as fulfilling biological needs by promoting growth, as providing compensations for difficulties and frustrations in the individual personality, as leading to self-realization and so to character development, and as an incentive to the acquisition of knowledge.

Among the leading psychologists in the field of child development, the value of play is put forward in the strongest terms. Susan Isaacs refers many times to its value in promoting learning and in stabilizing the child's emotional life, as well as to its function of helping him to understand the complexities of social relationships. Charlotte Bühler, William Stern, Louisa Wagoner, and many other psychologists whose work

[1] *Handbook of Suggestions for Teachers*. Board of Education, 1937, pages 81 and 82.

is concerned with young children also have much to say of play as an educative influence.[1]

To illustrate the acceptance of the value of play, the following paragraph from a modern text-book in psychology[2] will serve:

'In their play children learn to observe quickly, to judge, to weigh values, to pick out essentials, to give close attention; they learn the value of co-operation, to recognise the rights of others as well as to insist on their own being recognised; they learn the value of freedom through law; they learn the value and function of work and the joy of accomplishment. No wonder that play is regarded by many as the most important educational factor of them all.' Such statements in varying degrees of clarity and emphasis are to be found in most of the text-books of educational psychology which are in the hands of Infant School teachers.

In fact the principle that young children are best educated by means of their play is very generally accepted by educationists in this country and in America. In practice, however, there is a wide divergence in the procedure adopted in various Infant Schools. Some schools, still in a minority, carry out fully the principle of education through play or 'self activity'. Others follow a very different practice. The general public, as a whole, is even less convinced than the educational world about the value of play in school. It is possible to trace the idea that play is trivial or even harmful back to early beliefs. Play was viewed with suspicion in the early Christian era, and found little place in the schools of the Renaissance period. In the early days of Elementary education in this country it was perhaps natural that the necessity of teaching the illiterate masses to read should occupy the foremost place in the minds of those concerned with education, and that despite the influence of such men as Robert Owen, the temptation to press formal instruction on very young children should creep into the schools, a temptation which was greatly increased

[1] Books on the value of play are referred to in Sections I and II of the bibliography.

[2] *The Psychology of Childhood.* Norsworthy and Whitley, 1937, p. 131.

when the system of 'payment by results' was instituted. Under this system play was inevitably looked upon as a waste of school time, and this attitude has not entirely vanished from the minds of many teachers.

Moreover, apart from any question of tradition, there are undoubtedly many people who become disturbed and anxious at the sight of young children engaged in play in school. They expect mischief and trouble to arise when the children's activities are not directed by a teacher, and they fear that children educated in this way will grow up without knowledge or self-control. They are quick to trace disturbances in the world and social behaviour of which they disapprove to the excessive freedom which they allege is given in schools to-day. There is often tolerance of play as recreation, but not as an integral part of the educational system.

Teachers in the schools which use play as a means of education have frequently to reassure parents and try to convince them that their children are really receiving education as well as enjoying themselves, and they often have to meet criticism of their methods from the teachers in the upper schools. Moreover, it requires more skill and intelligence to educate children through their spontaneous activity than to follow more formal and prescribed systems of instruction, and it is more difficult to assess the value of the result obtained. The enthusiasm with which the Montessori system was embraced by many teachers was probably due to the fact that it offered the security of a prescribed series of activities with an exact procedure determined beforehand, while at the same time it allowed for freedom of movement and apparent informality for the children. In Infant Schools which do not base their education on play, there is a genuine desire on the part of many teachers to make school life happy and attractive for the children, and if the teachers were convinced that the children would really benefit from more play in school they would give it. From their point of view as much as from the point of view of teachers who use the methods based on play, it would be of great value if many skilled investigators would take up the task of measuring the results, including the long-