

**THE EDUCATIONAL VALUE
OF CERTAIN AFTER-
SCHOOL MATERIALS AND
ACTIVITIES IN SCIENCE**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649491513

The Educational Value of Certain After-School Materials and Activities in Science by Morris Meister

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

MORRIS MEISTER

**THE EDUCATIONAL VALUE
OF CERTAIN AFTER-
SCHOOL MATERIALS AND
ACTIVITIES IN SCIENCE**

THE EDUCATIONAL VALUE
of
CERTAIN AFTER-SCHOOL MATERIALS
and
ACTIVITIES IN SCIENCE

BY
MORRIS MEISTER

*Submitted in Partial Fulfillment of the Requirements for the Degree
of Doctor of Philosophy in the Faculty of Philosophy,
Columbia University.*

—
NEW YORK
1921

ACKNOWLEDGEMENTS

IT is with a feeling of great gratitude that the author wishes to thank his instructors and associates at Teachers College for the inspiration and guidance which he has received from them. To *Professor John F. Woodhull* he owes the discovery of a life-interest. To *Professors Thomas H. Briggs, Otis W. Caldwell* and *William H. Kilpatrick* he is indebted for invaluable aid in gathering and organizing the material of this study. For much of the data and experimental equipment, the author owes thanks to *Mr. A. C. Gilbert* of the *A. C. Gilbert Co.*, *Mr. J. P. Porteus* of the *Mecano Co.*, and to *Mr. H. M. Porter* of the *Porter Chemical Co.* In the experimental phases of the study the author could never have done without the cooperation of *Principal Henry C. Pearson* of the *Horace Mann School* and *Principal Joseph K. VanDenburgh* of the *Speyer Junior High School*. To *Mr. Fred F. Good*, the author wishes to express thanks for his patience and for his many valuable suggestions.

But above all the author wishes to acknowledge the great interest and devotion of *Miss Florence Glickstein* whose intelligence and self-sacrifice made possible the bringing of the work to a successful close.

CONTENTS

<i>Chapter</i>		<i>Page</i>
I	Introduction	1
II	The Materials and Activities Listed and Described	8
III	Educational Propaganda of the Manufacturers	63
IV	Boy Reactions to After-School Materials in Science	78
V	Analysis of the Problem	98
VI	The Procedure Used	107
VII	Experimental Results and Data	129
VIII	Conclusions and Discussions	141
IX	The Science Club and the Science Play Shop	153
X	Summary of the Important Features and Findings of the Study	172



CHAPTER I

INTRODUCTION

Educational thought and investigation of the last ten or fifteen years have been focusing the attention of teachers, supervisors, educators, and the thinking public upon certain educative forces that exist quite apart from the activities of the schoolroom. These forces are sometimes so vital and so important in shaping the life of the individual that the failure of the educational system properly to guide and control them has brought upon it a considerable portion of the criticism of recent years. Developments in educational philosophy and psychology have been very emphatic in pointing out that what our pupils do during every hour of the twenty-four in the day—and of every day in the year—is a factor making for education and therefore a legitimate consideration for the school and teacher. Thus, we have begun to investigate such questions as home-study, play, and nutrition. We have gone into the home and made recommendations to parents in matters which have hitherto been looked upon as belonging only to mother and father. We have begun to lay stress upon student organizations of all sorts; seeking in them value in citizenship and habit formation. Clubcraft, scoutcraft, and camping have become pertinent considerations for the educator and, what is more important, for the teacher in the class room. And, as might be expected, this newer element has had its influence upon our schools, their organizations, curricula, courses of study, and methods of instruction. The concept that the school is not a place where we prepare for a life that is to come, but is an integral part of life itself, must necessarily and in a very intimate way relate school procedures with the vital factors of life.

In a sense, we are preparing our pupils for a future life in the most effective way when we teach them to live better their present lives. From considerations such as these, extra-curricular activities have been deriving greater and greater importance. Eventually the line of demarcation between the two phases of

activity should fade completely. The school day may start at 9 and end at 3; but its influence will function at all times. And in turn, methods of work, content, and organization within the four walls of the school-room should take their quality and their inspiration from the well-springs of enthusiasm so common to after-school activity.

Needless to say, we are as yet far from so ideal a development. To the pupil, out-of-school time has always been and still is the period of freedom par excellence. We have perhaps progressed beyond the point where he thinks of the school-room as an abode of horrors, of the teacher as an ogre, and of books as instruments of torture; but too often his real life is still essentially distinct from the school. His greatest activity and his greatest enthusiasm still center around the extra-curricular where are to be found problems of his own choosing and ideas born of his own inner urgings.

As for the teacher, he has been reacting to the extra-curricular in many different ways. When seized by the immensity of some teaching difficulty, he may storm at the "distracting influences" which take "their minds off their subjects," or he may feel envious of these rivals to his efforts, or he may welcome them as offering a "whip" with which to lash pupils into submission—by laying punitive restrictions upon their after-school time. Or, he may throw care to the winds, and enter whole-heartedly into the extra-curricular plans of his boys. If he is one who reacts in this last way, he almost always attains a popularity and a sphere of influence that make teaching a joy.

The parent is perhaps the only one who is in a position fully to appreciate the extra-curricular. Most of his problems as a parent, a good deal of his worry, a goodly portion of the cost of child support, and nearly all of his pleasure with his children are tied up with the extra-curricular. If he be the unintelligent parent, he welcomes such a procedure as will relieve him of his problems. Time spent in school is so much less time for his boy to get into mischief. If he be the thinking parent, he will make the effort himself to reconcile for the boy the two distinct claims upon the latter's time. Both types of parents are ready to cooperate and to accept recommendations looking to a better state of affairs.

And society is filled with individuals who look back upon these two phases of their past lives with two quite distinct attitudes: with censure, criticism, and unpleasantness for the one; and with glowing recollections of time profitably spent for the other. It is a very wide-spread reflection upon American college education that it is essentially an extra-curricular training. In some colleges it is frequently a matter of disrepute to have devoted much time to studies. The same condition holds for the high school and in a different sense even for the elementary school. The man of sixty who reviews his life and concludes that his real education was what he got while in contact with the world of actual experience is often paralleled by the high school or college student who regards as his real schooling his experiences of out-of-school life. "He has nine months in which to get his schooling and three months in which to gain an education."

From every point of view possible, extra-curricular activities loom up as immense factors of educational importance. In the field of science there has always existed a body of materials and experiences that were essentially tied up with life out of school. Before the great industrial changes which brought to civilization the "factory," and which herded our masses into congested cities, the home was a center of industrial, social, and intellectual activity. In this activity were found a stimulus and an opportunity for experiences of a physical, mechanical, and manipulatory nature. This stimulus existing quite apart from the systematic education of sixty or seventy years ago, nevertheless made one of the largest contributions to the intellectual development of the individual of that day. As modern industrialism continued in its growth, the home ceased to function in the old sense. Education became more and more "curricular" and systematic, "squeezing the educational juice" out of the home.

Charles W. Eliot in his paper on "Changes Needed in American Secondary Education," comments upon this situation as follows:

"If any one should ask—why has modern society got on as well as it has, if the great majority of its members have had an inadequate training of that sort, the answer is that some voluntary agencies and some influences which take strong effect on sections of the community have been at work to mitigate the evil. Such are, for example, athletic sports, travel, the use by city people of public parks and gardens, the practice of that alert