

**PRINCIPLES OF  
SECONDARY EDUCATION;  
A TEXT-BOOK. VOL. II**

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Principles of secondary education; a text-book. Vol. II by Charles De Garmo

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PRINCIPLES OF SECONDARY  
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PRINCIPLES  
OF  
SECONDARY EDUCATION

A TEXT-BOOK

BY

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CORNELL UNIVERSITY

Vol. II

*PROCESSES OF INSTRUCTION*

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## PREFACE

It is to the New Method of Bacon, refined, corrected, and supplemented by the older method first fully described by Aristotle, that the world owes its present condition and rate of progress. By whatever path he may prefer, the teacher must go back to these primal sources of thought and efficiency for his teaching models, because there are no others. This volume seeks in due measure to accomplish for the young teacher what Mill and Jevons and Mach have done for the man of science; namely, to impress upon him the few but vital mental processes that alone lead to enduring results.

Whatever function vicariousness may have to perform in the ethical world, it has none whatever in that of intellect, for in education no man is invested with the right to think for another; to do so is to negate at once the chief end for which we educate. If, as we are told, the immortal gods laugh with inextinguishable laughter at the follies of men, their glee must indeed be great when they behold a teacher trying to educate his students by doing their thinking for them. But perhaps the gods do not laugh; it may be they weep.

Insight and efficiency are the two supreme results to be secured by our methods of instruction, for out of

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insight grows what the world calls culture, and out of efficiency, mental discipline. Culture is the total refining effect—intellectual, emotional, and volitional—produced by insight into the meaning of what is learned; its quality depends upon the nature of the subject-matter, and its quantity upon the scope and intensity of the insight. Mental discipline is the intellectual effect produced by training in the use of what is gained by insight; its quality depends upon the nature of the subject-matter, and its quantity upon the scope and intensity of the training. We should not, therefore, try to distinguish between cultural and non-cultural instruction, for all teaching is cultural in proportion to the extent and quality of the insight it enables the student to attain. All instruction, likewise, is disciplinary to the extent that it renders the student efficient in the use of what he has learned. Culture and discipline are accordingly the inevitable concomitants of all good instruction, and they become in turn the just measure of its effectiveness. To gain insight, the student must be incited to think; to gain efficiency, he must be stimulated to do. His practice must be saturated with thought; his thought made rich and concrete by his practice.

It is the hope of the author that the study of this book will help to render these and other important principles axiomatic in the mind of the teacher, so that easily, naturally, and at last inevitably, he will instinctively employ the methods that lead to insight and efficiency; and that ultimately he will become as in-

capable of using the false in method as the artist is of portraying the ugly in art.

That the use of the book may not invite to a violation of the very principles it most insists upon, topics for discussion are placed at the close of the various sections, to be assigned, perhaps in advance, to the members of the class for recitation and report. The topics assume an understanding of the sections to which they relate, and in addition offer both student and teacher opportunity and incentive to pour into them all that study, thought, and previous experience can contribute.

Volume I of this work treats of The Studies. Contrary to the original intention, it has been deemed best to restrict the present volume to The Processes of Instruction, and to reserve for a third, the remaining important topic in the principles of secondary education, namely, The Processes of Training.

The author desires to express his sense of obligation to Albert Anthony Giesecke, of Cornell University, for his kindness in reading manuscript and proof, and to Willard James Fisher, of the Cornell Department of Physics, for scrutinizing the examples drawn from the natural sciences.

CORNELL UNIVERSITY,  
April, 1908.