

new one must be substituted, and the same procedure followed throughout.

VI. Memorizing is the next factor in order to fix the data which will be needed in the solution of higher problems. But this memorizing has already been, in part, accomplished during the thinking process, and is completed by reviewing the related ideas in their logical order.

VII. Care should be taken to call forth the initiative of the pupil at every stage in the study process. The teacher's most difficult task will be to eliminate herself. Every class will need a wise leader to direct the work, and, if necessary, to keep them from wandering from the problem; but in no case should the teacher formulate, discuss and solve the problem—in other words, "recite the lesson"—for the pupils. Free and easy class discussion, when all are intent upon the solution of a common problem, will be found more beneficial from every point of view than the formal individual question and answer method—the "lesson hearing" plan.

The above fundamental principles will be found applicable, either in whole or in part, to every inductive subject. Deductive study, or the application of accepted principles to concrete examples, will differ from the inductive, in that the problem is not the formulation of a theory, but the "identifying of a fact with some group of facts for which a satisfactory theory already exists." There will, however, be found the same necessity for understanding the problem, judging the adequacy of the theory, application of theory and memorizing as in the inductive process. Here, again, is an opportunity of developing initiative and individuality of the pupil.

The study of a text-book, such as history or grammar, for example, involves the same steps as are outlined above, the former giving splendid illustrations of the inductive, the latter of the deductive process of reasoning.

At what age or in what grade may we then expect pupils to consciously employ and profit by the use of logical steps of inductive and deductive study? In reply, I have but to quote from the results of Miss Earhart's investigations, in which she proved that not only was there a marked improvement in grades VI and VII, when logical methods were used, but that even grade IV were able to do independent study of a high order. To quote her own words: "This series of lessons showed plainly that

pupils in the fourth grade are capable of finding problems for themselves, of organizing the lesson, of asking intelligent questions, of forming sensible hypotheses, of exercising judgment as to the statements made by the author, of mastering formal difficulties for themselves, and in various ways of exercising initiative wisely and profitably. It shows, too, that when pupils work in such a way, they work with zeal, and accomplish much more than is done when they must spend time upon useless details and mechanical methods of working."

Since it is possible, then, for the ten-year-old pupil to use logical methods of study, there seems no valid reason why better results have not been obtained in our schools, unless the fault lay with the teaching staff. Our inspectorial reports have for years contained references to the mechanical methods used in many of our schools, yet I doubt if the situation here is any worse than in similar localities in the republic to the south. Miss Earhart not only secured through questionnaires the teaching methods adopted by many American teachers, but by actual visitation observed these teachers in the classroom, and reports the results in the following language: "The conclusion is forced upon us that although pupils possess the ability to employ the various factors of proper study, the teachers lack a clear conception of what such study is. The teachers who wrote the questionnaire do not themselves employ these factors to any great extent, and the teachers observed in the classrooms are not training their pupils to use them. The teacher is the centre and moving power in nearly all of the work, and the requirements laid upon pupils involve mechanical effort to a large degree. The aim of the work seems to be the mastery of subject matter; the development of the power to work independently, intelligently and economically is almost entirely ignored. The teachers do not know of what such study consists, and consequently give little thought to its cultivation. They would probably do so if they had definite ideas as to its nature, for they are frequently heard to lament the fact that their pupils do not know how to study or to think."

While no experimental work of the above nature has been attempted in Canada, yet it is safe to hazard the guess that our conditions are little, if any, in advance of our progressive American cousins. All must agree that the training of pupils, even in the lower grades, for independent and profitable study is far ahead of much of the present-