A DESCRIPTION AND EXAMINATION OF A TYPE OF PROFESSIONAL TRAINING IN THE LIGHT OF EDUCATIONAL PSYCHOLOGY

by

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A DESCRIPTION AND EXAMINATION OF
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I
INTRODUCTION

The application of scientific principles of training in the field of accounting is limited by the absence of a knowledge of these principles and by practical factors. The senior accountant who is acquainted with the principles of pedagogy is an exception. The pressure of time and other conditions affecting the work would always act as an impediment in the way of an endeavour to ascertain and apply more correct methods. The very nature of professional accounting makes the learning of it systematic. It should be understood, however, that this learning is not necessarily based upon any conscious or preconceived psychological principles. The training can be said to be in keeping with science in so far as those methods that have been developed by the practical application of common sense, resemble the refined judgements of the scientist, as they frequently do.

The descriptive part of this work is written from a psychological point of view. There appears to be no text dealing with the training of the beginner in accounting in this manner. The accounting text treats
the subject from a general point of view, concerning itself with that which should be done to satisfy certain legal and other requirements. The description in these pages deals with a specific form and method of training. A psychological discussion of the way in which a subject is learned must involve a description, in some sense, of that subject. The text on educational psychology showing how arithmetic is learned, may state and describe the problems of arithmetic but concerns itself primarily with the learning process. It may only be considered a psychological treatise.

The study of any type of learning is the study of the acquisition of new ways of reacting. The important parts of the process are governed by the laws of learning. Each law emphasizes a particular part of the process.

The exercise by use of any mental reaction tends to strengthen it. This, simply, is the law of use. From it follows the law of frequency, which states; the more frequent the exercise of a reaction the stronger it becomes. The converse is equally true and is referred to as the law of disuse. The law of recency states that the more recent the exercise the stronger will be the reaction. All of these laws are subject to the provision that other factors remain unchanged. In fact these other factors rarely do so. They differ in their quality and, accordingly, the law of effect is introduced which states that in
human behaviour much depends on the sense of satisfaction or annoyance which accompanies an act or its result.

There is an abundance of psychological evidence to show that a subject must be "over-learned" if the desired knowledge is to be retained. Many experiments have been made to show the extent to which we forget what we learn. It is essential that a subject should be sufficiently learned before the learner is transferred to some other subject. These laws appear to be almost self-evident. They include the cumulative result of centuries of scientific study and, simple though they may appear, it is possible to observe their violation wherever we see the training of individuals carried out without their study and application.

The mind is always active in the acquisition of knowledge. An attempt at training in any field will be seriously handicapped by failure to recognize this basic fact of human learning. The theory that the mind is a tabula rasa on which ideas are passively impressed, as was taught by the early psychologists such as Locke and Hume and the associationists and impressionists that followed, has long been discredited. The belief that ideas are passively received is still popularly held, however, and affects the training of individuals under all circum-
stances where the advances of modern psychology are not known. Where, in the past, emphasis rested with the teacher it is now placed on the learner. The object of the teacher used to be to "impress" ideas on the mind of the learner. It is now to direct him in such a manner that his mind may be as active as possible in the accumulation of his knowledge. A learning situation is looked upon as being in the nature of a problem, wherein the learner must exercise his mind to obtain the most economical and effective method of solution. The whole of a situation, however large or small, first presents itself vaguely to the mind with certain dominant features which indicate its meaning. The mind tends to analyse, fill in, and relate the detail to the meaning as a whole. In doing this the mind analyses and synthesizes concurrently and inter-actively at all times.

The individual should be trained to think along the course the mind naturally takes if the most desirable results are to be obtained. Learning may be made difficult if the normal flow of thinking is impeded or improperly directed. An efficient direction would be that which applied, as far as possible, a scientific knowledge of the laws of learning and aimed at guiding the learner in such a manner that he would think for himself as much as possible. He would acquire new facts in a logical and connected manner. Each part would be
related to all other parts and this sense of relationship would actively direct his mind in the solution of any problem.

The following hypothesis will be found useful in the examination of the training that is to be outlined. Three methods of learning will be recognized. The first is the trial and error method, which is looked upon as the most elementary and which implies no reflective thinking or analysis, but consists of random movements with the object of reaching a goal. The second is the method referred to as imitation - the observation of that which others do enables the learner to acquire a store of knowledge without the process of discovering for himself, at the time, the importance of each individual part. The third way of learning is by reflective thought. This method involves a consciousness of the problem as a whole, the objectives and the relationship of the parts to each other and to the whole. This threefold distinction is, however, useful rather than final, since trial and error learning is apparent throughout the whole range of our thinking.

An attempt will be made to show that these three methods are present in varying degrees in the learning that is to be examined - that though no one method may be present to the exclusion of the others, one may be
the more prominent. Psychologists agree generally that the last is most effective. An attempt should be made, therefore, to raise the level wherever possible from learning by trial and error, or by imitation, to activity in which the higher processes of the mind are involved.

Moreover, reasoning is the form of learning that is particularly adaptable in the field of accounting. Psychology has achieved an understanding of the processes of reasoning, a knowledge of which is essential if training is to be carried out correctly and effectively. In reasoning the mind is operating along its normal course. It continues to analyse and synthesize, but in a more purposive, refined and complex manner. Instead of having a vague picture of a situation, we may have a plan or a hypothesis or a problem with certain defined paths of procedure towards solution. This implies the recognition of relations between the elements and a combination of them in the course of observing them. In reasoning, consciousness or awareness of the problem or plan as a whole is essential, if the parts are to be examined as to their relation to it and to each other, for there obviously must be the recognition of appropriate means to the end.

In the solution of any problem or the construction of any hypothesis, not only does the mind use the facts of present observation; it also draws from the storehouse of memory any experience that relates itself.
To facilitate this latter activity, the material stored in the mind should be in a form to permit selection and rapid review for the purposes of selective thought. If the relationship between ideas is clearly recognized, each step in the learning process will lead easily and inevitably to the next.

Moreover, the abridgement of trial and error learning is greatly facilitated by the prevention and correction of errors. Through a knowledge of mistakes the learner may see the consequences of his acts or get a better understanding of what is required of him.

Errors should be brought to the notice of the learner wherever possible, if they are to be subsequently prevented or corrected. Unless errors are known, the learner may carry on at some performance indefinitely with little or no improvement. It is possible for an incorrect mode of procedure to become habituated, if it is not corrected at the outset. Where a knowledge of mistakes is before the mind, the selective processes are facilitated, and the learner is enabled to find his way more readily to his objective.

Training methods may be improved scientifically if the mind is developed in accordance with the laws of learning, with full recognition of the active nature of the mind. Random and imitative thinking should be replaced as far as possible by reasoning. To do this a plan and under-
standing of the purposes implicit in it should be substituted for the vague outline that is formed at first in the mind. The obstacles that may present themselves should be clearly indicated, and the means supplied by which shorter and better paths may be recognized and selected.
Checking of Calculations and Achievement of Familiarity with Various Forms and Records

The checking of calculations is usually the first work to which a junior accountant is assigned. In the checking of additions he is given definite instructions as to what columns in the book or statement he is required to check. There are, of course, many different places where the checking is necessary, but he is carefully directed; and the only knowledge required of him is the ability to add. This checking of additions is a very important link in the reasoning that leads to the consummation of the total verification work that is being carried out. The junior at this stage has no idea as to what this may be. Each step he makes is under careful observation. He is instructed to mark whatever he checks with a distinctive mark, so that the gaps in his work may be subsequently discovered and completed. For example, when the totals are carried forward from one page to another, if these are not marked and checked, the work that he has been doing on additions is of little value. He will also be given work to do on extensions, that is, the verification of multiplication wherever it appears on the data that are submitted to him, the most frequent of which are inventories. Here again, the amount of work he is
to do is definitely indicated, and he will show what has been done by marking.

The early part of the training is confined to work of this nature. No technical knowledge is necessary, but the student acquires a familiarity with forms of which he will see a great deal later. He will be given inventory sheets on which are shown: a description of the article, the quantity, the unit price and the total amount. Under the heading of quantity will be shown the number of units of weight, count or measurement used, e.g., pounds, feet, gallons, etc. The unit prices will be shown in terms of prices for the particular weight or measurement in which the quantities have been shown. The total amount will be the result obtained by multiplying the quantity by the unit price. It is found necessary, quite often, to convert the quantity given into some other unit, such as cwt., or gross, before the computation can be made. In doing this the senior cannot be bothered too often. The student must appeal to whoever is responsible for the compilation of the inventories. He cannot afford to ask questions before having tried to reason the problem out for himself, as he may be accused of asking absurd questions. In this way he gradually acquires information that he uses in doing work of a similar nature where similar units and variations are found.
He will have been given the opportunity to observe various classes of records, cash books, purchase journals, sales journals and registers of different descriptions, also various types of lists and summaries. These will be different everywhere he goes, so that he becomes accustomed to the fact that all systems are different, however much the underlying principles are the same.

Discussion

In the learning of the work on additions, as such, little new knowledge is obtained. The learning of the work on extensions could be considerably facilitated if the junior were given the same types of work to do consecutively, until it became familiar. This, however, is not always possible, as no similar type of work may be available for his next assignment. He may find himself working on additions again. This is not so true of this early simple class of work, as there is a great deal of it and he will do enough to become accustomed to the possible variations; as the work becomes more complex, the likelihood of continued practice upon similar kinds of work is lessened. The learning could be facilitated if, on the completion of his assignment, comparisons were made with other sets of working papers, showing work similar to what he has been doing and giving explanations such
as we shall show later. In developing familiarity with various kinds of records, the training could be rendered more effective if the records that had been dealt with were reviewed and compared or, if, after a number of tasks of a similar nature have been done, these were reviewed as a whole and the similarity indicated.
The junior may next be allowed to assist in the counting of small cash funds and in the preparation of the relative working papers. He is instructed to follow the previous working papers, which will give him definite directions. The cash vouchers and other items making up the fund are listed. Currency is set down by the various denominations of notes and metallic money. Vouchers are listed in detail, showing dates, particulars and amounts for each. Cheques and vouchers for advances are also noted in detail showing dates, names of drawers or persons to whom advances have been made, and the amounts of each. The vouchers are examined to see that they bear the proper signatures and that they appear to be in order. The work to be done is clearly indicated on the previous schedules. All schedules the junior now prepares will be subsequently reviewed by his senior and any omissions pointed out to him. The senior will probably show him, for example, that he has failed to trace the cheques appearing on his schedule to the cash book relative to the particular fund that is being verified.

Upon completion of this part of the cash verification he may be given work to do on the cash in bank.
Here again, the previous papers show him what he is to do. He traces paid cheques and also deposits to the cash book and bank statements. In tracing the cheques he must examine them, paying particular attention to: the date of the cheque, the name of the payee, the signatures on each cheque (which should be of those who are authorized to sign cheques) the endorsements, and the date on which each cheque was paid. The detail appearing on the duplicate deposit slips is also checked with the individual entries in the cash book. In the preparation of the reconciliation between the balance, as shown by the cash book, and that of the bank statement or bank pass book, the work is more difficult. Usually the reconciliation has already been prepared by the bookkeeper, and all that is required is that this be checked. If, however, the student has to prepare the reconciliation himself, he will be called upon to do some careful thinking. With no unusual items, however, it may be a simple matter for him, by following what was done on the working papers of the previous audit, to complete the necessary work. There may be items appearing on the bank statement that do not appear in the cash book, or items in the cash book, other than outstanding cheques, which are not to be found on the bank statement. Here he has a problem on his hands. Failing to find the solution himself he may consult his senior. In any event it is by attempting to work out the problem that
he learns most quickly, as compared with merely following the work completed by someone else. This aspect of his learning will be discussed more fully later.

Discussion

The student will find himself in a kind of intellectual maze but by following the devious paths laid out for him in the papers of the previous audit, he will be led into the open. His work, when he looks back upon it, may seem meaningless and it may remain so until he has done a great deal, by which time he may have acquired an understanding of it as a whole. This understanding should be brought about much earlier. After the work has been completed it should be reviewed and necessary explanations should be made. This fact is demonstrated when we again consider what happens if a mistake has been made. When the work is being reviewed, some doubtful item may be discovered which, due to the lack of understanding on the part of the junior, is not adequately described. More information is demanded. In order to give it, the necessity arises for mental activity which always results in a fuller conception of what is being done. If working conditions permitted, time could be well spent, as we shall see, in the solution of problems dealing with this phase of the work.
The Learning of Vouching

Vouching is the term used to describe the examination of invoices, letters and other documentary evidence by comparison with the entries in the books of original entry. In this class of work the junior is usually started on the verification of petty cash disbursements. He will find that these are supported by invoices approved by the employee responsible for the receipt of the goods or services for which the invoices were rendered. Items such as postage stamps, carfare and similar payments will be supported by vouchers signed by the employee receiving the money. He must scrutinize these carefully and list all vouchers that appear to be missing. In vouching other disbursements, he must see that the invoice is on the creditor's own form and not on a form made up in the office of the client. The date of the invoice will be so inspected that he will discover if bills are being regularly paid on their due date or otherwise. He must see that the invoice is addressed to the client and not to persons in his employ. He must observe that receiving reports are attached, and that both are approved as to prices and calculations. The method of going about the vouching depends upon the way the vouchers are filed, either alphabetically by names of customers or accounts, or numerically. If they are filed numerically it is only
necessary to ascertain the number of the vouchers required. If alphabetically, it will require the name of the customer or account as well as the voucher. In some cases it may be possible to do the vouching by working back in the files to the books of original entry.

Discussion

It is necessary for the junior to determine the simplest and shortest method practicable on the particular set of books with which he is working. He takes an unnecessarily long route the first time he does the work, and learns shorter and better ways by his own experimentation. The number of different things to be remembered should be impressed at the outset. In practice this is not done. He memorizes by the drill received in the doing, perhaps at the expense of the work. It would be safer and more efficient if he were drilled before the work commenced. Much time is spent before he is able to remember all the things he must do. He is usually left to find the way for himself, being told once what to do and after having been given an illustration. If he has done the work previously he may receive no direction at all, though the manner in which it is to be done may be quite different from that of any previous experience. Direction would eliminate a great deal of lost time, and would be valuable even if it came after something had
been completed, providing more work of a similar nature is assigned before he has forgotten what he has been told.
Learning the Verification of Inventories

In the verification of inventories reference has already been made to arithmetical calculations. At a later stage the junior will be given work in connection with quantities and pricing. He will be required to examine original inventory figures, inventory records, receiving reports and shipping reports in confirmation of the quantities. When a physical inventory has been taken, he must make a comparison of the inventory sheets with a selected number of original tickets, cards or memoranda, showing the result of the counting, weighing or measuring. He receives specific instructions as to the amount of work to be done and, if the work be complicated, he is told the manner in which to go about it. He may also be required to check certain items on the inventory sheets by reference to inventory records, when he must first find out whether quantities alone are to be checked, or whether he must verify unit prices and amounts. If the sheets are compiled from physical inventories, there may be numerous differences between the sheets and the records. If the sheets are prepared from book inventories, the sheets and records will agree. He must be ever on the alert for differences that may lead to some important readjustment of the inventory. He must keep
his eyes open for valuable information as to slow moving material, as the records will show purchases or production and sales in the account for each commodity. Discontinued products, damaged merchandise and such items are illustrations of what he may discover. In his examination of the shipping records, he must use care to see that no fictitious billings have been made and that merchandise billed to customers is excluded from the inventory. He will receive no definite instructions for the detection of fictitious billing, though the possibilities for manipulation are numerous. In the tests that he makes, of course, he will be guided by his instructions in each particular case. Copies of invoices are usually examined to see that the sales appear regular, and the shipping records to see that the goods were actually shipped. Original orders are examined to ascertain if the goods were ordered and if the terms thereof are complied with.

In order to certify prices, a systematic plan is used, based on that of previous audits. It usually consists of listing certain items that are to be verified and of examined invoices in support of all the amounts appearing thereon. The prices shown on the most recent invoices are the ones that are examined; and they, of course, should be approximately the same as those used in valuing the inventories. Such items as duty, freight, insurance and similar charges may be included in the final price,
in which case the schedule will have columns to take care of these. The junior must ascertain also whether all the invoices examined by him have been recorded in the books; and to do so, he must make reference to the inventory records. He finds that usually the best way to do this is to insert the numbers of the required vouchers on the schedules and to get the vouchers from the files all at the same time. This shorter method he may not discover until he has done a number of jobs of this description. Particular instructions will be given to him in regard to the verification of market prices as to the sources to which he must refer, such as trade papers, price lists and similar data. In this connection, he is usually referred to the purchasing department where complete information is available. He may also obtain information as regards difference in sizes, grades and composition and any matters relative to the price. He should not accept the information he receives without investigation, but should satisfy himself that it is correct.

Discussion

A technical knowledge is required that can only be obtained by experience, and there are many factors that condition the training in this regard. In one case the junior may be dealing with an inventory of canned salmon and in another it may be vitrified pipe. Notwithstanding
this, there are enough classes of working papers on the same subject so that he can be greatly assisted. A difficulty lies in the fact that it is generally too long before he is given another opportunity for doing the same kind of work again. This could be overcome if he were given work on similar types of inventories. This work, of course, would only be in the nature of practice, for, obviously, the time for doing it is prescribed by conditions which can hardly be controlled. As the student is trained at present it takes years before he can keep in mind all the important things that are necessary in the verification. The main reason for this lies in the fact that no definite effort is made to equip him with this information, apart from circumstances in which the work normally occurs. In the multitude of variations that will be encountered, he can hardly be expected to remember very much of what he has learned, unless definite steps are taken to impress the details upon his mind. The ideal condition would be one in which he would be permitted to do nothing else but this kind of work until he became fully acquainted with it. He could start on the easier and be gradually taken to the more difficult. The important principles could be introduced, widened and strengthened on a scientific basis.
Learning the Verification of Accounts and Notes Receivable

The Junior may be instructed to verify the accounts receivable, which means that he must ascertain from the ledger the date or dates on which the outstanding balance was incurred and write it on the schedules of accounts that have been submitted to him, opposite the particular amount. His object is to give information that will ultimately lead to the formation of an opinion as to whether or not an account is good and collectible. If the account has been paid subsequently to the date of the financial statement, no better evidence could be given of its collectibility, so that in this case it is not necessary to age the account. It often occurs, however, that the junior will first age the account and afterwards ascertain that all or part of the amount that he has aged has been paid, thus showing that he has done unnecessary work. He is not being watched as he does this work, so he can only learn for himself that it can be done more expeditiously. The amount of detail required for his ageing will be ascertained by consultation with his senior. What should be considered sufficient credit terms? Should the balances have been paid after thirty, sixty or ninety days? Quite often the ledgers are marked in such a manner, for the client's own use, so
as to make such information readily available. He must make notes of any information that is relative to the collectibility of the accounts. He should refer to the credit list to find whether the customer is in financial difficulty, whether the account has been passed by a third party for collection, whether there is any probable litigation involved or whether the item is in dispute. Experience and the suggestions that he received from the lists that were used on the previous audit are of invaluable assistance. He will be expected to check copies of invoices rendered for a certain period through from the sales journal, also shipping records, to see that the merchandise shown by the invoices was actually taken out of the inventory records before the end of the period. He must keep in mind that he is trying to ascertain that these invoices are not fictitious sales or consigned sales. At the same time he will make a test check of any credit memoranda and entries made in the books of original entry after the period of the audit to ascertain if any of these affect the collectibility of the accounts at the end of the period.

Notes receivable are usually examined and listed at the date of the audit, at the same time the cash is counted. The form followed will be indicated by previous lists, which the assistant is expected to follow closely. He will be criticized if he fail to do
so or if he make any variations therefrom without excellent reason. The lists of notes receivable usually show, for each note, the number of the note, the date of the note, the names of the makers, the names of the endorsers, the due date, the rate of interest, the date to which this has been paid, the amount of the note, the collateral held and the value thereof. The total of the list is subsequently checked to the control account to see that it is in agreement. If all the notes are not on hand a list will be received of those held elsewhere and will be confirmed by certificate received direct from their custodians, such as bankers or collection agents. In verifying the existence of a note, the junior is inclined at first to lose sight of the fact that it is also his main duty, as in the case of the accounts receivable, to give information whereby an opinion may be formed as to their collectibility. Quite often, too, the mistaken impression exists that because the debt takes the form of a note it may be considered good. The junior has to learn to be on his guard against this idea which is easily held and is too often held by the client. If he is informed that the note is secured by a lien on the product of the company, this is not enough. He must ascertain the realizable value of the asset against which the lien is held and the cost of realization. He must learn not to
take it for granted that, because a property once had a value greatly in excess of its present day worth that it is still as valuable. This may not occur to him when he is writing the information on his schedule, but he will be questioned about the matter later.

Discussion

The forming of an opinion as to the collectibility of accounts comes from the information given on the schedules. This work is of a somewhat complex nature and, as was the case in the learning previously described, there is no doubt but that training could be improved if it were possible for the learner to be something of a specialist until he has acquired a valuable mass of experience. Too great a period of time is allowed to elapse before he again does the same kind of work. Much could be gained if the objective were carefully placed before him by his senior. The junior is inclined to do his work, following the path laid out for him, without a realization of the part his work is playing. He has no comprehensive view of what he is doing. It is true he gradually acquires this after following the same procedure many times. It dawns on him, instead of being definitely placed before him by his senior. It is true the senior does attempt to make him realize what he is doing, par-
particularly when he is subsequently questioned regarding information he has failed to put on his working papers. More progress could be made if the senior made his explanations at the proper time.
Learning the Preparation of Schedules of Accrued and Prepaid Items

The preparation of schedules of accrued or prepaid items, typical of which are wages, interest, taxes, insurance, rent and such similar accounts, may be called for. In verifying accrued wages the amounts of the last payroll paid during the period, the first payrolls of the next period and the periods covered by the payment will be obtained. With this information at hand the amount of the accrued payroll can be easily determined. Accrued interest, accrued taxes and similar accruals are checked in detail by reference to the actual supporting data and the calculation thereof. In connection with the verification of prepaid rent, the junior may be told to prepare a list of leases on which he notes the date of the lease, names of the parties, the term and renewal privileges, rent payable for original term and event of renewals, special stipulations as to subletting privileges, etc. The vouchers for payments made will be examined in conjunction therewith. The determination of the actual amount prepaid will be arrived at by a direct reference to the information as shown on his schedule, which will have been confirmed by examination of actual leases or documents relative thereto. The calculations in each case have usually been made previously. The only problem
that remains is to follow the reasoning and to check the premises. In verifying prepaid insurance, he draws up a schedule giving the following information: number of policy, name of insurance company, risk against which insured, amount of coverage provided by policy, date of commencement of insurance, date of termination of insurance, amount of premium and amount of insurance prepaid. This information is obtained from the actual policies themselves or, if the information is obtained from a register of insurance, the policies are checked in detail with the information as it is shown on the schedule. In calculating the proportion of the premiums prepaid, the actual number of days is ascertained from the schedule, that is the date of the commencement of insurance and the premium. He must observe that the policy is the signed original, not a signed copy. If it is a copy he must report it to his senior, as the whereabouts of the original must be known and its existence established. If it is in the hands of a third person it will be necessary to determine that person's interest, as there is a possibility that an unrecorded liability may be discovered. The client may be borrowing money by mortgaging his real estate and making no record thereof in his books. An asset which may have actually been sold may be shown on the books. The junior must also see that the policy is in the favour of the client. If it is payable to someone
else, or to the client and someone else, as their interests may appear at that date, it will be necessary to ascertain the interest held or liable to be held in the client's property and the accounting in respect thereof must appear on the client's books.

**Discussion**

This again is typical of the general nature of the work for which the training is being received. Certain facts are derived from various sources and, by the process of reasoning, the conclusion is arrived at which finds itself expressed in one of the assets or liabilities on the financial statement. The facts must be established by examination of their authority. The reasoning must be questioned to determine that the conclusion rightly follows from that authority. The establishment of the facts is a matter of training such as is being outlined. The ability to question and analyse the logic, and to be satisfied that it is true and to be correct in doing so, involves complex mental operations that are not only a matter of training but also depend to a high degree on natural endowment.

Part of the above information is called for on the working papers, so that whether or not he understands it, he cannot fail to give it. Other information, such as whether the policy is in the name of the company or whether
or not the policy is a copy, is not required to be shown on his working papers, and he can fail to give it. If he realized the object of his work, this omission would not occur. In other words, if he were shown what the work leads to, and were expected to work with this in his mind, the detail would be automatically included. It is seldom that the junior in his early stages is brilliant enough to have a comprehension of the ramifications of the reasoning that was in the mind of those who planned the work. First, he should ascertain the amount of the prepaid insurance and secondly, obtain information regarding the existence of the assets to which the insurance relates, and make sure that all relative liabilities are taken up in the accounts. This will be dealt with further in considering the analysis of various accounts.
Learning the Verification of Accounts and Notes Payable and Outstanding Liabilities

A list of the balances of the accounts payable ledger or a list of unpaid vouchers, if a voucher register is kept, may be presented for verification. Balances must be checked to the individual accounts in the ledgers. All balances which have been outstanding for a long time are to be investigated to discover if there are any later bills which should also have been included, or if there is a dispute which may involve further liability. There may also be accumulation of interest on the items which are outstanding. If any debit balances appear, the junior must deal with these in the same manner as he did with accounts receivable. There is a tendency, when given lists of accounts payable for the first time, merely to mark these debits as checked in the same manner as the credit balances. He is not likely to realize that they are not different from accounts receivable, and that their collectibility must be determined in the same manner. If an account called "sundries" is included in the list, full details of these must be procured. Definite instructions may not be given with regard to this, and he must be careful not to accept, without investigation, such ambiguous titles as the above, or any of a similar nature that do not clearly indicate a creditor. An examination must be
made of monthly statements issued by the more important creditors to see that these are in agreement with the amounts appearing on the list. Important differences or items that cannot be understood must be referred to the attention of the senior. In verification of notes payable the preparation of a schedule is required from the notes payable account, giving the following information - date of issue of the note, name of creditor, interest rate, tenure and due date, name of endorser, collateral hypothecated, accrued or prepaid interest, and remarks as to the confirmation of the existence of the notes. The required information should be obtained from the notes payable book. The total must agree with the general ledger balance. The notes are examined to see that the information thereon is in agreement with the details as shown by the analysis of the notes payable account. Cancelled notes are examined for all notes paid during the period. A test check of payments will be verified in the same way. The information is also confirmed by correspondence directly with the creditors, which will be checked to these lists.

In order to ascertain whether all liabilities have been taken up, the junior will be requested to examine all transactions recorded since the close of the period under review. He will examine vouchers and invoices
from vendors. He will scrutinize payments made, debits and credit memoranda issued, journal entries, receiving reports and stock records. He will, of course, receive specific instructions as to the actual work he is to do. As all invoices dated prior to, or on the last day of, the period should have been recorded in the books as liabilities, it is his duty to check carefully the invoices as to their dates. Upon discovering an invoice that has been omitted he will list full particulars, the important information being the name of the account to be charged, the date of the receipt of the merchandise and whether the merchandise has been included in the inventory or not. The name of the account being charged, the nature of the expense and the period for which billed, must be shown for all unrecorded invoices for expenses.

Discussion

Even after the junior becomes fully competent to give all the information required, he does not necessarily understand the importance of all of the detail or the part it plays in connection with the final result. He does not look for reasoning, he follows and works by imitation. He should be assisted in producing the reasoning himself. He should first of all be asked what he is endeavouring to ascertain, namely, if the full liability of the company had been set up both as to principal and
interest, or whether it had been overstated. He could be asked what all the detail on the schedule he was about to prepare had to do with this objective. If this method were adopted, wherever lists or schedules were prepared, it would produce beneficial results. It would make him learn logically instead of by memorization through repetition. The main objection to his present mode of learning is that he follows his instructions, but the instructions do not give the final objectives of the work or show the connection with the various minor elements. A schedule could be drawn up explaining in some detail the cause for the work and the general relationship of the integral parts in connection with each particular section. The schedule could be prepared on a sound psychological basis that would ensure increase in efficiency and effect a more rapid development on the part of the junior.
The Learning of Posting

Posting is the name for the procedure whereby every entry in the books of original entry is traced in detail or in total to the accounts of the general ledger.

In checking postings, the junior must ascertain that all entries in the book of original entry have been carried in total to the general ledger and to the subsidiary ledger; that all debits have been posted as such and that all credits have been posted as credits; that the entries have been posted to the proper account and that all entries are understood. The work of posting is usually started in collaboration with the senior assistant, who is familiar with the procedure, the junior calling the entries from the references that are given to him by the senior. There are various ways of doing the checking on the different types of records, and he must discover the shortest method. He cannot rely entirely on posting folios appearing in the books, but should make certain that every entry is posted regardless of whether or not a posting folio appears in the entry. When columnar records are in use, he must be sure that the totals of the columns are posted, if the details thereof have not been posted. For example, the column for raw materials in the voucher register will almost always be posted in total. The column for sundries may be posted in detail.
or it may be summarized and the postings made from the summary. Certain columns, again, may be posted in total as well as in detail, such as the accounts payable column of the voucher register. The total of this column will be posted to the accounts payable in the general ledger and to the individual creditor's account in the creditors ledger, if such ledger be in use. As was previously stated, he must be sure that postings have been made to the proper account and that the entries are understood. He finds that the best way for doing this is to obtain at first an outline of the accounts used, indicating the accounts that will be affected. Consideration should then be given to the particulars of the entry to decide if that account is the one in which the entry should be recorded. He is required to read each entry, mentally noting the account affected, and is then able to determine whether or not the entry is correct.

Discussion

Many years of checking of postings would be necessary before bookkeeping could be learned in this way. The reason is that, in checking the posting, a different process of thought is involved with a different aim in view. The bookkeeping is learned incidentally, assuming, of course, that the junior has done no bookkeeping. The checking of postings is a somewhat mechanical process.
Any improvement that could be made, as is apparent from
the description of the work, would come in the way the
posting was done, that is to say, the actual route taken.
Here, as elsewhere, there are right ways and wrong ways,
short ways and long ways. The junior is given no definite
instruction as to which is the best way to start. As was
indicated, he has done the work before with a senior and
he may or may not have done enough of it to know which
is the shortest route. A little time spent with him
showing the alternative routes he may take, and question­
ing him with regard to work that had been done before,
would unquestionably be beneficial. As regards the under­
standing of the entries, this involves knowledge and train­
ing of the highest degree. To be in a position where he
can do so he must be fully competent and should have
received a training such as will be outlined. It frequently
happens that he is given the work to do without having
received the training. If we consider that it is necessary
for him to have at ready reference the whole body of
professional knowledge which he must bring to bear in
examination of the correctness of any entry, we realize
the distance he must travel before he is competent to
deal properly with this task. This particular section
involves so extensive a field as to occupy the entire
technique of some professional accountants.
Learning the Analysis of Capital Asset Accounts

The first important fact that is to be learned in the analysis of any account in the general ledger is that the other side of the entry must be shown and also a description of the nature of the transaction. This may be very simple when it is so stated, but it is a fact of fundamental importance and is another way of saying, "Show the bookkeeping". However simple this principle may appear to be, the junior does not understand it immediately.

In confirming expenditures on such capital assets as land, buildings, machinery and equipment and such intangible assets as goodwill, patents and trademarks, schedules are drawn up and additions and deductions verified. Upon starting his work he will be furnished with the schedules dealing with the same account on the previous audit, which he follows closely. These schedules show particulars describing the account, opening balances, additions, deductions and other changes and the final balance. His work, though it may be new, consists of following that which has gone before. If anything is charged irregularly to capital that should have gone to operating and he overlook it, it will be shown on his
schedules and will be discovered later. The changes in these accounts are chiefly explained by new purchases, payroll or store transfers.

In verifying payroll and store transfers, he is not led very far afield from work he has already done, for he has previously done considerable work on both of these items. The relative ease with which he is able to confirm the amounts that are shown on his schedule may lead him away from the more important problem. Are these stores and payroll transfers proper charges to capital and how have they been determined? - that is, how did their compiler differentiate between operating charges and capital charges in making his distribution? If this question does not confront the junior as a result of whatever information he has gathered in the course of his experience, it will be placed before him, either by the notes on the previous schedules or by his senior, if he fail to make enquiry in connection therewith.

Discussion

Here again, it is possible for the junior to analyse the accounts without fully realizing the significance of what he is doing. He should clearly understand that he is to show the other account or accounts affected by the entries he examines and to give a brief description of the nature of the transaction. He should have certain
aims before him, based on an understanding of the part his work plays. He should, of course, realize that he is again confirming the existence of an asset. He should have a knowledge of the logical method used for doing this. Such is not the case at first. By imitating the work that was done on the preceding audit, he shows the other side of any entry that has been made and gives a brief description of it, and also marks it in a manner to indicate that he has examined some document authorizing the entry.
Learning the Verification of Share Capital and Examination of Minute Books

The junior may work in verification of share capital and on such data as the minutes of the meetings of the directors and shareholders of the company. He will examine the share certificate stubs and see that the total agrees with that as shown by the general ledger to be outstanding. When he does this the first time, he may be asked to prepare a list of the names from the share certificate stubs of the shares outstanding. It will be compared with the total as shown by the ledger, and he will be corrected if he has made any error.

He may be requested to make a test check of the entries from the register of transfers by examining the cancelled certificates turned in and accounting for the new certificates issued in exchange therefor. He may also make a test check of the posting from the register of transfers to the register of shareholders, the purpose of his work being to assure the accountant that the company has not issued more stock than it has been authorized to issue and that the number of shares outstanding, as shown by the accounts, is correct.

In being asked to make a synopsis of the minutes of directors' and shareholders' meetings, the
junior is given work that calls for something entirely different from anything he has done before. He can gather from the previous working papers that he must show the date of the meeting, the kind of meeting, directors' or shareholders', names and the positions of persons signing the minutes. When it comes to making a synopsis of the minutes themselves, there is little to guide him. His first effort will be carefully watched and doubtless added to. It is only by many efforts that he comes to understand what is important and what is wanted. There is much in the minutes which has no importance as far as the auditor is concerned. On the other hand, some of the most vital transactions with which he is concerned appear in the minutes, and of these he must have knowledge.

Discussion

Everything that has been said with regard to the detail work applies with equal force to the work on share capital. The junior is not conscious of the reasons or the place of the work in the audit. Much of what he does is mechanical, and there are numerous things that he should have before his mind. He is not drilled on these to the same extent as in the other instances cited, because the work comes at wider intervals of time, so that he may forget most of what he has learned.
In his checking of the register of transfers, where it was not necessary for him to prepare a schedule of the work done, except to state that he had carried out a certain amount of checking, his errors are not known. They can, therefore, be of little use as a means for guiding him. In listing the names from the share certificate stubs, the errors that are made will become apparent and may be corrected. He may not know, however, for some time why he is doing the work, as the errors will not necessarily indicate this, unless, as each error is corrected, the relationship to the objectives is indicated.

When he makes his first attempt to synopsize the minutes of the shareholders' meeting, he has little idea of what is expected. The work is carried out too much on a trial and error basis. Though everything he writes may be examined, and improvement may be effected, that which he has overlooked may not be known. Some attempt should be made to show him, by a review of numerous examples, what is expected, after which he should be questioned to ascertain whether he is thinking along the right lines. He could be shown what information contained in the minutes is important from this point of view, instead of learning, as he does at present, by trying to follow as nearly as possible the previous papers.
Description and Discussion of the Learning of Analysis of Profit and Loss Accounts

A description of the work on the analysis of the profit and loss section of the general ledger will indicate an advanced form of the training that has been previously received. The junior is expected to "show the bookkeeping". He has, of course, the previous working papers, which he follows as to form and which give him considerable aid in his work, as many of the items are unaltered from year to year.

When he begins, his tendency is to imitate, without reflection, the previous papers, trying as best he can to give similar information to that shown on these papers. This will carry him through, as long as he does not get any new or unusual problems, in which case, of course, he may appeal to his senior. It is not until he learns that he must show where the other side of the entry has been recorded and that he must give the particulars, that he is able to analyse an account properly.

The profit and loss schedules are arranged in the order that the items appear on the profit and loss statement. It will be unnecessary to deal with the analysis of every item. Certain of the more important ones will indicate the nature of his work and show the method
through which it is learned.

Sales are analysed in skeleton, that is to say, the schedule will show cash and accounts receivable, which are the other side of the entries, and then show monthly totals. The work here is supported by detail verification on sales. In showing the monthly totals, the junior is expected to investigate if he find unusual fluctuations. If he does not do this, he is certain to be questioned as to the reason for the fluctuations, if this does not appear on the working papers.

In the analysis of the various accounts that make up the Cost of Sales, the same form will be followed. In the case of purchases of raw materials, he shows cash and accounts payable and a general description of the nature of the purchases. In some cases he is expected, especially in the purchase of such valuable items as tractors or automobiles, when they are purchased for sale, to give all details, both as to quantity and amount and the serial number and description of the article involved. This, of course, is also true of sales under the same circumstances, where the quantitative figures are used in confirmation of the inventories. In dealing with freight-in and any other items that go to make up the cost of sales, the same procedure is followed. He should have learned from his skeleton analysis that he is saying, as a whole, of the account, what he is later to say in much more detail
of other accounts that require a more minute analysis.

His analysis of the salaries' account should give him an opportunity for observing the effectiveness of the detailed analysis that he is doing. For example, he lists the names of the individuals who are in receipt of the salaries, he ascertains the amounts received monthly and multiplies them by the number of months for which the work is being done; his total should agree with the ledger balance. This is an illustration of how he can analyse an account, bring it into agreement with the ledger balance and yet not necessarily understand completely. He may not realize for some time, consciously, that he is still "showing the bookkeeping" and at the same time giving, in a much condensed form, full particulars of the contents of ledger pages, which themselves may show meaningless totals.

There are certain accounts in the profit and loss section in which errors are more likely to be found than in any others, errors of commission, by intention or otherwise. For example, the bookkeeper may have certain items and not know to which account they should be charged, or he may have something he wants to conceal or, again he may want to prevent certain accounts from appearing too large. The auditor's working papers are designed to anticipate such a condition. The junior, of course, is not
cognizant of this at first. He will analyse one of these accounts, such as miscellaneous expense account, or office expenses, or general expenses, and will observe that the previous working papers call for minute description of every item contained therein. So long as there are no unusual items in this account, he may be permitted to follow blindly what has been done in the past. An item may have to be of very unusual nature to attract his attention the first time. However, whatever is contained in the account is shown on his working papers and, even though he may not recognize that a certain item is not properly chargeable thereto, his senior, upon examination of his working papers subsequently, will do so. As was formerly stated, the form of analysis is shown by the previous papers that he is to follow, so that he has no particular problem in this respect. In fact, it is so clearly set forth that, again, it is likely to lead him away from "showing the bookkeeping".

In an analysis of such accounts as taxes, his schedule may closely resemble the ledger sheet, and here, if the bookkeeper follows correct principles, which is by no means always the case, he is able to see more clearly that he is dealing with bookkeeping and not merely listing figures. In this account he will see only a few entries which he copies on to his schedules in the prescribed form. He will show, for example, the other side
of the entry, reserve for taxes, and description, say, periodic provision for land taxes, the details of the property involved. If the payment of taxes has actually been charged to this account, he will show the other side of the entry - Cash - the City of Vancouver - and a description of what the payment is for, such as, taxes on lot twelve, block sixteen, and the period. If property is held jointly with another party, who remits the taxes for the company to pay, he may show it as follows - Vancouver Manufacturing Co., (being the other side of the entry,) and - Cash in payment of their proportion of taxes on the fully described property, (being the description of the Transaction). His analysis of rent account may show rent paid to several individuals and the period. He may, in following the last working papers, where no irregularities occur, overlook the fact that the payment date has been altered. However, his schedules will show this fact and his senior will draw his attention to the oversight.

It is in such accounts as this that he should recognize the reason for some of his calculations of accrued items, for his analysis shows rent paid for eleven months; and he is brought to realize that, if no charge has gone through for the twelve months, the liability therefor - in other words, the other side of the entry - has not been set up.
In his analysis of the insurance account he is doing work more closely resembling work that he will do later in analysis of balance sheet accounts. Here he shows the name of the insurance company to whom the premium was paid and full particulars concerning the policy, such as the serial number and such particulars as were previously stated in dealing with prepaid insurance. He is now able to connect up in his mind the relationship between this account and the work that he has previously done, perhaps somewhat blindly. He is expected to trace the particulars of the policies from this account to the schedule of prepaid insurance and to mark them as so checked. He will find certain of the policies on the list of prepaid insurance, unmarked, which he will be able to mark by reference to previous years' working papers. If he still finds items unmarked on the prepaid insurance schedule, he may discover that he has examined policies, the liability for which has not been set up. He may find on his analysis schedule some items unmarked. These may represent policies that have been omitted from the list of prepaid insurance.
Description and Discussion of Method of Learning to Carry Out a Complete Audit

The junior as yet has not been given a complete audit to do, in the full sense of the word, although to a certain extent he has, in one way or another, completed sections of work which, if put together, might almost be considered an audit. He has verified the existence of certain assets and liabilities and has been trained so that he may be ready to start to do an audit himself.

We have observed that in each department of his work there was a lack of consciousness of the logical processes involved, and also that he was slowly acquiring knowledge about which he was subsequently to reason and which he was to fit into a scheme that represented his understanding of the work as a whole. We are now about to observe the manner in which this consciousness takes form. We will also observe that it is not until he has this consciousness that he is able to do his most effective work. He is about to adopt a thinking or reasoning attitude regarding his own work, encouraged by a similar attitude toward his junior and by the desire to do work, as far as possible, that is above criticism. This was true, of course, to some degree of the work that has been previously discussed, but, the awareness usually came after he had passed through his period of tuition, when
it was of little value to him in doing the work.

He is now passing into a phase where the mind draws from its storehouse all the experiences and knowledge that it has accumulated and builds it together into a whole. He is passing into that stage of mental activity which, though characterising his work to some degree in the past with regard to the parts, now becomes true of both the part and the whole. He reaches a state where reflecting, weighing, and balancing, play a more fundamental role than ever before. He will begin to discover now that everything that he has been doing has been leading toward some goal. He will become proficient in work that may never again be expected of him except, perhaps, as a critic. This constitutes the most basic criticism of the manner in which he has been trained, for this awareness and consequent proficiency should have been reached at a time when it would have been useful in the work he had been doing.

The first important discovery that is made in taking up a small audit, is that the trial balance gives him his starting point. It also serves as a guide and gives him, to a certain degree, a knowledge of his position in relation to the work. This is an important factor, for as he analyses or verifies the accounts he marks them off on the trial balance. The items that are unmarked represent the work that is not done. The previous
working papers also serve to guide him. The working papers are arranged in the order in which the accounts are arranged on the balance sheet. In undertaking his work he follows these papers and, therefore, the order in which he examined the accounts is determined in this way. The accounts on the trial balance are seldom found to be in the same order as they appear in the working papers. In the majority of cases, the accounts are arranged in the general ledger in alphabetical order and consequently appear this way on the trial balance. It is true that in such cases where the accountant is well trained, the accounts in the general ledger may be arranged in balance sheet order and his trial balance will, therefore, also appear that way. The balance sheet of the auditor, however, is not often found to have the same arrangement as that of his client. The system, therefore, with which the junior sets about his work is determined by these two factors - the number of accounts as shown on the trial balance and the order in which he proceeds to verify them, as indicated by the previous working papers. This is an important consideration for, though he may not have anyone actually supervising him until his work is completed, he always knows how much is to be done and the order in which to do it.

Each schedule in the previous working papers indicates how much work is to be done on any particular
account and, as was previously stated, little difficulty will be encountered, because at some time he will have had experience on almost all of the accounts. The main difference between the work that he is now doing and that which has previously been done, lies in the fact that, in the past, if he were in trouble with any particular account, he could refer to his senior. Now he is, in a sense, the senior and must solve the problems himself. His work on the accounts has gradually brought him to a state where he can do this, for, in a more particular way, his development has been such that he could finally solve the problems that arose in whatever he was doing.

He will have a junior assisting him and here his training takes on a newer aspect, for he now assumes the role of instructor. In analyzing and explaining the problems that are placed before him by his junior, a higher degree of awareness of their significance dawns upon him. In the past, he may not have recognized the existence of a forest, for he was concerned with a tree. His concern with the tree tended to shut out a more synthetic comprehension of the forest as a whole. In his new role he is continually called upon to exercise a sense of proportion and perspective that formerly was provided, to a great extent, for him.

He now also becomes an auditor of an auditor, for it is his duty to review the work that is done by his
assistant and criticise it. This also serves to broaden his understanding and knowledge of the work that is being done. If he fail to note an omission or error on the papers of his junior, it will be discovered later by someone senior to him and will reflect upon him. He must, therefore, be just as careful in his review of work given to him as in his own work. An effort of concentration is always required in this respect, as it is easy to take for granted that the work of his junior is satisfactory, without carefully examining it. When his own work is completed he must review it with this same attitude, attempting to discover omissions or errors and looking for possible situations that may require adjustment. As the work proceeds, he keeps a schedule for his own use, showing work that has yet to be completed on certain accounts, errors that may need adjustment, and any information that may subsequently require to be reported on.

In addition to the working papers, he is now required to prepare adjusting journal entries, balance sheets and statements of profit and loss. Adjusting journal entries contain the adjustments of the accounts which are finally considered necessary by him. When these adjustments have been discussed with the client, they are given effect in the accounts and throughout the working papers. Every journal entry represents a problem. He
has to decide where the correction is to be made and what accounts are involved, and he must give a proper explanation of the nature of the adjustment. In his discussion with the client as to the advisability of the entry, new demands are also made of him, for his client may ask him for the justification for the change.

In drawing up balance sheet and profit and loss accounts, of course, he continues to follow the previous working papers. However, there is always some new item that has not appeared before and which will now represent a problem to him, upon which he should obtain advice. It is by the continuous work that he does in preparing statements, and in finding answers to the problems that arise, that his proficiency in this work is developed. He finds that statements vary on every type of work that he does; and it is not until after years of practice that he is able to complete the work without reference to some higher authority.

When the balance sheet and profit and loss statement have been prepared, the work of writing the report or letters in connection with what has been done is required. No special training has been received in this respect, with the possible exception of writing notes on verification work that has been done and synopses of minutes or work of a similar nature. The previous educa-
tion that has been received is of more importance in this respect than in any other. A good education in the writing of English is indispensable. In addition, a knowledge of the technical language of the profession must be acquired.

Reports quite often resemble word for word those that were written on the previous audit but with the dates and figures altered. A paragraph here or there may be completely new, but it is often possible to make reference to some other report for the wording that may be used. Unusual reports are never expected until the experience and training of the person writing them justifies such procedure. In addition to the report, letters are written dealing with certain routine matters. These letters are stereotyped, and the form used on previous occasions is usually adequate.
General Discussion
of the Learning of Detail Verification

We have considered the nature of that which is looked upon as "detail work" and which forms the foundation of the junior's accounting knowledge. We have described the nature of the work. In dealing with additions and extensions, we saw that the work was done under such supervision that nothing but a knowledge of simple arithmetic was necessary, and that a secondary knowledge was being assimilated, namely, familiarity with various accounting forms. The junior is started on this work for one reason, which may or may not have a connection with a consideration for his training, because of its simplicity and the fact that no previous knowledge is required. When he is doing it no attempt is made to show him, or to ascertain if it is worthwhile showing him, the part his work is playing or the fact that it is an integral part of a larger reasoning process.

This lack of regard for the development of the consciousness of the reasoning process involved in the work is furthered by the fact that each part is a section unto itself. The junior may have become thoroughly

\[x\] This is a technical expression which means both a detailed verification and the verification of detail.
proficient in carrying out the detailed instruction regarding the work on cash balances, but it may be some time before he realizes the fact of the existence of one of the items on the balance sheet. It is quite possible for him to complete his work without this understanding. In other words, he may follow the procedure carefully, and do the work thoroughly and not know what he has done. This also becomes apparent when we consider again his work on the inventories. This work divides itself into two classes, that where he follows written instructions as to checking and that where he prepares schedules. In the first case, he has a routine procedure to follow, such as checking calculations or comparing inventory sheets with original inventory tickets. It is quite possible for him to do these things without knowing why he is doing them. This is just as true of the other work outlined. In the preparation of inventory schedules, he follows a definite form. He does not know why this form is different from that used on another inventory, or that every column and notation it directs him to complete has an important place in the logical processes back of the work.

We found in the work on accounts and bills receivable that same automatic following of instructions. We saw that it was possible for him to age the accounts and afterwards ascertain that they had been paid, by
following his instructions in the order that they appeared on the working papers and not in the order that an understanding of the reason for his work would indicate. If he had before him the fact that these were different methods of establishing the same fact, he would not use both. He would select the more effective and omit the other.

We have pointed out that the preparation of schedules, dealing with inventories, bills receivable and prepaid and accrued items, involved carefully thought-out methods of establishing certain facts by reasoning. The details or premises appearing on the schedules were confirmed by reference to some authoritative document, and the conclusion, which resulted in a balance which appeared on the financial statement, was worked out on these schedules and the reasoning clearly shown. The work may have been done many times until the form, which is somewhat stereotyped, was completely memorized. He may not realize he has been reasoning. He has memorized a pattern, which is always used on similar types of work. It would be much more beneficial to him if he were shown the extent to which he was reasoning, and that this reasoning is characteristic of the general nature of the whole of the work that he is doing. He should be shown the relationship that the reasoning on each specific type of work bears to the whole, a relationship that eventually occurs to him, after he has
passed a long way on, but which is not definitely and intentionally placed before him.

When the junior is given work on calculations his instructions save him the necessity of wondering what he has to do. He has nothing to reason out for himself. He merely adds or multiplies, as the case may be, whatever data are submitted to him. If, however, he has done similar work before, he may be given some sheets with the following curt request, "Check this". He marks his work, indicating what he has checked. Very often the work must be handed back to him and the fact pointed out that it is incomplete. In this way he gradually learns that when he is given anything to do it must be completed. So that, even in work as elementary as this, where it would appear that there is small place for trial and error, this is the way he learns. If he be above the average in intelligence he is likely to ask for similar sheets on the previous audit and follow them. He reaches a stage, at length, when he takes into consideration the whole of his small assignment and is able to complete it satisfactorily.

The objection to this method of learning is that he completes numerous assignments before he reaches an understanding that he could have had much earlier if the trouble were taken to instruct him.

As for his acquiring a familiarity with various
kinds of records, this is done without recognition of the fact that learning is an active function. If the various records were placed before him, and he were required to answer questions prepared with the object of exercising his mind on the importance of the variations, in order that he might grapple with them as problems, there is little doubt as to the improvement that would result.

The same thing is true of his work on the cash balances. He obtains a schedule showing the work he is going to do and follows it. When he first does the work, it is nothing more than a list. It does not occur to him that each of the details of his list has a significance. If it did, and he did not understand, he might ask why the total amount of his count was not shown instead of all the detail. He does not realize that for everything he does there is a reason. He is so engrossed in what he is doing that he never thinks of enquiring if it be so, and what the reason may be. He works by imitation. He follows the path laid down for him by the papers of the previous audit, and also learns by omissions and errors. It is apparent that careful examination of cash work on other audits would give him a clearer consciousness of what he is doing, and place him in a position where he would be able to examine his own work in the light of what he had been taught was necessary. He would not merely imitate his
predecessor. His knowledge would act as a guide to him, and he would be able to become his own critic, as regards what the important requirements were and not as to how near he was to the previous working papers. This is just as true of his work on the bank balances. His instructions tell him to compare the detail of the duplicate deposit slips with the cash book. He does not know why he is doing this. He does not realize that he is attempting to satisfy himself that the funds of the company are intact. Even when he draws up his reconciliation of the bank balance and the balance as shown by the company's cash book, he does not realize to what extent the items he shows as outstanding are significant. In other words, he does not realize that what he is showing as detail on his working papers has a significance that has been carefully thought out, and that everything he writes is of importance, providing he follows the papers of the previous audit. On his reconciliation in regard to the outstanding cheques, he shows the number of the cheque, the date and the name of the payee. The cheque is easily identifiable; if anything appears to be unusual, such as the name of the person who issued the cheque, an enquiry should be made and the results should be recorded on the working papers. The junior seldom makes this enquiry at first, unless he has been requested to do so by his senior, and this shows that he does not
understand, in his early attempts, the prime requisite of the work he is doing.

In our description of "vouching" we found that it was necessary for the junior to have a certain amount of knowledge with which to commence the work. We offered the criticism that this information is usually acquired while doing, and at the expense of, the work. How much is overlooked can never be known. It is safe to assume that in the beginning his omissions are numerous and gradually become less and less. The only way that his omissions could be discovered would be to do the work again, which, of course, is impracticable. The learning must necessarily be slower. If it were known, as in the case of errors such as we have previously mentioned, that he had made a mistake and it was pointed out to him, the trial and error process would at least be shorter. This condition could be eliminated if certain files of invoices were kept, containing known errors which, after thoroughly explaining the principles, he were told to check, and afterwards each detail demonstrated and again related to the whole. He should have a picture of the work that is being done and the details that he is required to look for, fitted carefully into this picture.

With regard to his method of finding his way through the records, he should not be left to his own
resources. We have already discussed the familiarizing of the student with various kinds of records. The latter could be carried out profitably in conjunction with this work, and the groundwork laid for posting, which is to follow later.

The junior, in dealing with inventories, is left to himself. He must not bother his senior too often, and he avoids asking absurd questions. This observation can be made of nearly everything he does. An advantage is gained through the fact that he is compelled to think for himself; but, on the other hand, he is thrown into a condition where he must learn by trial and error, where the knowledge of the errors and the improvement that results therefrom are restricted. In this field, as in the others, learning by trial and error cannot be eliminated, but it can and should be lessened. There are common errors, mistakes that every junior makes. These can be classified and by careful instruction avoided.

In each of the different classes of work there are methods common to all classes. We have seen that in vouching, the junior must have a certain body of knowledge which he uses for examining the documents that he traces through the records. We saw defects in the manner in which this knowledge was obtained and also in the way he learned to apply it. This may be said to be true wherever
detailed instructions are set out for the junior to follow, and not so true when he has to prepare schedules showing the manner in which his results are arrived at. The learning in the first case is distinctly trial and error learning, and, in the latter, nearer to imitation and reflection, though there is an element of the former always present.

Inventory verification demonstrates this fact clearly. One part of the work is detail checking, which is readily comparable to the work already discussed and can be improved by the methods suggested. The other, dealing with pricing, involves the preparation of schedules and introduces an objective medium for doing the work and subsequently examining it. The imitative element is found in the fact that the junior follows in minute detail the schedule of work prepared on the previous audit. Any errors that are made are set out in writing, and there is no doubt about their being discovered. As we have pointed out, it is quite possible for the schedule to be prepared without an understanding on the part of the junior of its implications. It is only after he has completed many schedules of a similar nature that his work takes on a meaning as to itself and its relationship to the entire verification work. Means have already been given whereby this work can be changed from that of merely following, to that where
the junior is able to think more while he learns, the previous papers serving as a check and an aid to his thinking.

It would seem to be a simple matter to inform him that he is attempting to establish the fact that the inventory is valued at cost or market, whichever is the lower, and that this is the reason he is examining cost invoices and sales invoices. Yet it is surprising to find that a junior who has completed many assignments of this description does not understand why he is showing dates on his schedules and does not connect in his mind the fact that the sales invoices he is recording are an indication of the current market price. It remains for the senior to examine his figures against those of the inventory to ascertain the fundamental fact concerning the valuation of the inventory. It demonstrates the effectiveness of the working papers, that it is possible for this to be done, but at the same time it shows the weakness in the training of the junior. If more attention were paid to training the junior, he would pass from a condition where he imitated his predecessor and would adopt the attitude towards his own work, that his senior had done.

We have drawn attention to the fact, particularly in connection with inventories, that the work usually divides itself into two parts - that where detail checking is done and where little thinking may be necessary, and that where
certain conclusions are arrived at and where a great deal of thinking is necessary. This is true of work on accounts and bills receivable. In the detail work, notes are made on the schedules of dates, amounts paid and such information as will lead to the formation of an opinion as to the value of the asset and also as to its existence. This is a case where, owing to the demands of the work, the system of the work and the training of the junior go hand in hand, because his work and his thoughts are written down and any information that is wanting is asked for and anything that is unnecessary eliminated. He cannot so often follow what has gone before, because new conditions, requiring new treatment, demand that he must reason things out. The second part of the work depends upon the first. He must form an opinion from the information he has shown on his papers. In this work, then, his learning is more active than elsewhere. The same criticism can be made here as was made in regard to the learning of vouching - that he learns too much while he is doing the work. It is true that his progress is more rapid here than elsewhere, but that is because the nature of the work demands that he must think about what he is doing. Nevertheless, he discovers, to too great an extent, by errors or omissions the nature of the work and its relationship to the balance sheet. It would be a simple matter to indicate to him beforehand
the importance of the details and their connection with
the objective; in other words, to give him a realization
of the pattern of reasoning his mind is unconsciously
making.

Some of the pitfalls into which he is likely
to stumble have been indicated. The extent to which all
juniors commit the same faults makes them almost standard
errors. The manner in which these errors may be lessened,
if not eliminated, has been discussed. A greater effort
should be made to bring these errors to his notice. This
is done to a great extent when he is preparing schedules,
for these are always reviewed and his mistakes pointed out
to him. We have seen that, due to his lack of understand­
ing of the objectives and the reasoning of his work, it is
possible for him to make errors of omission without their
being discovered; and we indicated means whereby this may
be somewhat corrected. In the detail work that does not
appear on schedules, this is a more difficult problem, for,
as we saw, it is not possible to know what errors are made.
We saw that the junior must make his own mark on everything
he does, and that the senior subsequently reviews his work
to see that all items have been marked. It often happens
that the senior corrects the omission but fails to point it
out to the junior. This should not be the case. The
junior should be informed of all errors that he makes.
Though it is obviously not possible to place the errors before the mind of the junior in such cases where these are not known, this condition can be met to some degree on the basis outlined in dealing with detail checking, where it was suggested that sample invoices be kept with known errors on them so that the junior might be trained till he reached proficiency. The nature of the training would demand that all the errors come under his observation.

The method of learning described naturally lends itself to learning of a passive nature, if this expression may be used to indicate that form of learning where the mind is less active than in the more effective form. All learning, of course, is active, but there are varying degrees of activity. The expression is used to indicate a difference not in quality but in degree.

We can observe this clearly in cash and bank verification. We saw that he did not have a consciousness of the objectives of his work or of the reasoning whereby it had been planned. In following the previous papers, nothing was left to his imagination. He followed a routine procedure and listed the items in the same order that they appeared on those papers. He was given simple classes of work, so there was little likelihood of problems arising that would make him think. After having done the work a sufficient number of times the form became memorized. It
was usually when he failed to follow the previous papers that he made an error, the discovery of which served to accelerate the speed with which he learned the form. But if he were careful, there might have been no occasion for criticism; and his learning was dependent upon the number of times he was able to repeat the same operation. The same condition exists when he is reconciling bank balances. We saw that there is little necessity for constructive thinking. It is true he is expected to keep his eyes open, but no one knows to what extent he does this, not even he himself. It is only by repetition of similar kinds of work and a growing consciousness of their meaning that he is able to watch properly for such things as the date, the name of the payee and the signatures. When his work is objectively displayed on the working papers, there is some possibility of checking him, but only when something of an unusual nature arises and he is unable to deal with it. He gets simpler reconciliations to do at first so that his learning is acquired through repetition and memorization, depending on the number of times he does the work. As the work becomes more complicated certain problems arise, such as have been indicated, where the learning tends to become more active and consequently quicker.

For the same reasons, it is not possible to know how effective his work is when he is vouching. His knowledge is never objectively brought out until some error
is made. How closely he is observing that vouchers are properly signed, that they are on the creditor's own form, that they are being regularly paid, that they are properly addressed, that the several signatures of approval are shown and other similar information, is never ascertained. An examination of the present basis of his training would indicate that he does a good many assignments in order to learn to perform this complex mental operation satisfactorily. A method has been suggested to avoid this. It is enough to point out here that his learning is of a passive nature and that considerable time must elapse before he becomes proficient.

When he is doing his detail checking of inventories there is the same possibility of oversight. The work is of a tiresome nature, and, unless he is stimulated by a clear understanding and knowledge, it can be little more than a ritual to be completed as soon as possible. How can he keep his eyes open for slow moving material, discontinued products, damaged products, fictitious billings; how is he able to know that merchandise billed to customers is excluded from the inventories, that the invoices are in order, that the goods are actually shipped, if he is not made thoroughly conversant with the objectives of his work beforehand? It must be remembered that he must have a knowledge of these requirements readily at hand in order to carry out the work
efficiently. He learns to do this class of work in the same manner as that described elsewhere; he learns while he is doing the work, not before he does it. His consciousness of the requirements grows in this way, and is imperfect until considerable work has been done. We have seen that he must record the information he received in connection with verification of prices on his schedules, and a means is thereby given for checking him. Errors and oversights in this case can be detected and rectified. However, we also saw that the next inventory that he receives may be entirely different, so that whatever he has learned by having been faced by the correction of some error may be forgotten before he is given something similar to do again. Years may pass before he learns to do the work properly. He may not learn until he is showing someone else the correct way to do it, when some of the things he should have known may occur to him.

In the learning in connection with accounts and bills receivable, it is not possible for the junior to get very far without having done much thinking. It is true, of course, that a great deal of valuable information may not have been recorded and that what this information is may never be discovered. It is also possible to give unnecessary information. The only way to correct this condition is to shorten the length of time that it takes at present for the junior to understand what he is striving for. In his learn-
ing, as we have described it, this is brought to his attention by criticism. If there is no criticism and the work is straightforward and along the lines indicated by the papers he is following, the learning is less active in the same sense as has been previously pointed out. He may neglect to show such pertinent information as the credit terms, that the customer is in financial difficulty, that the account has not been passed for collection by a third party, or that there is possible pending litigation affecting the collectibility of the account, or that it is in dispute.

The checking of lists of accounts payable to the ledgers and postings is among the most mechanical work that the junior is required to do, and he does enough of it to become rapid and accurate. The mental alertness that is required when he is doing the checking is another matter and is subject to the same criticisms as were made above.

There is room for improvement in regard to the preparation of all lists, whether of notes payable, accrued or prepaid items. We saw that valuable information that may be discovered while preparing these lists is in effect incidental to the main objective. It is possible, through meticulously following the previous papers, to complete the assignment and not discover the secondary information. This is due to the fact that the junior's learning is acquired
by imitation of former work and not necessarily by reasoning about it, except that he does consider how near it is to the model he has before him. Though there may be little possibility of the primary object of these lists not being attained, it is possible for such secondary information, as to whether or not money is being borrowed on mortgages for which no record has been made, or of an outside interest and the liability consequent thereto, to be overlooked.

We saw that in making his notes on accounts receivable he must give information that will permit the formation of an opinion as to whether or not the accounts are doubtful. At present there is no definite way that he may go about this except by following his predecessor's work. We have cited certain questions that he could have before him when he does his work, such as - What are the credit terms? Is the customer in financial difficulty? Has the account been properly passed for collection by a third party? Is it in dispute? Is there possible pending litigation affecting the collectibility of the account? and other similar questions. At present the questioning of an account is occasioned chiefly by its age. Care should be taken to establish in the mind of the junior what the requirements are, and to indicate clearly the paths that he may follow, making him conscious beforehand of a definite procedure.
Verification work cannot be done properly unless the junior is always carefully attending to what he is doing. We have given numerous illustrations of this. When we consider the number of things that he must keep in mind when he is vouching or doing detail bank work, posting or anything of a similar nature, we see that he is being drilled in the formation of a habit of attending. He must criticize every item that he is examining with certain information before his mind. He does this a great number of times in the course of his work. The information that we have described should be placed before him in the beginning, and not be learned during, and at the expense of, the work, if this habit of attention with regard to the particular field is to be properly developed. In other words, he should not start out with the date of the invoice, one or two of the proper signatures in his mind and add to these as he progresses. He should have all the data in his mind from the commencement. It would appear then that some effort should be made to reinforce this very valuable aspect of his training by developing it more specifically.

We have observed that in part of the work, such as where the junior is preparing schedules that may be examined subsequently, his errors are shown. In order to avoid this condition he concentrates on reproducing as nearly as possible the form of the previous working papers.
His understanding of what is expected of him is not sufficient, when he commences the work, to let him do anything but follow carefully the form laid out for him. He is developing a habit of attention on the particular thing that he is doing; but the thing he is doing is not primary, but secondary - that is to say, his efforts are directed towards copying and not towards satisfying himself that the requirements that should have been placed before his mind beforehand, are complied with.
General Discussion
of the Learning of More Advanced Work
Leading up to the completion of an Audit

We have drawn special attention to the fact that, in dealing with the analysis of accounts, the chief requirement as the junior learns it, is to "follow the bookkeeping". He must follow it because, in recording on his papers the bookkeeping, he is showing the nature of the transactions that have arisen. Whether or not he is able to understand them, whoever examines his work subsequently must be able to determine the correctness of the entries that are made. The first object, then, for him is to show correctly what entries have been made, to understand the reason for showing these, whether or not he is able to form an opinion as to their correctness. The ability to form an opinion as to the validity of an entry, he acquires from criticism of his working papers by a senior. The junior usually learns this work in the same manner as he did that of the past in the preparation of schedules and lists. He meticulously follows previous papers. His concern is here, as it was in the cases cited elsewhere, to be as near as possible to the form of the previous papers. The pattern is memorized in this way, and the objectives of the pattern come to him gradually during the process. We saw that the principle involved is consistent throughout the whole of the analysis,
namely, to indicate the opposite side of an entry and to describe the nature of the transaction.

In our description of the work on capital assets, we saw that there was a detailed description, such as the name of the person or company from whom the purchase was made, and a description of what was purchased, or it may have been a stores' issue, (in which case this was shown) and what was charged indicated. Or again, it may have been a payroll charge when a description of the nature of the work carried out was made. In his work on the analysis of profit and loss items, the same principle was followed, though in less detailed form. The opposite side of the entry was indicated by some general description and what was purchased or sold was described in summary form.

The main criticism of the present method of learning is that the learner is not conscious of the principle referred to in the preceding paragraphs until after he has completed numerous assignments. This is evidenced in the fact that, the moment he is compelled to break away from the previous working papers, because of something of an unusual nature, he fails to satisfy the requirements. He learns what is expected in each particular instance by being required to show the work in proper form after it has been criticised. He discovers, after making numerous errors, that there is a principle involved. In
other words, it occurs to him that what he is doing in
detail is characteristic of the whole of his analysis.
This relationship should not be left for the learner to dis­
cover in his own way, but should be placed before him before
the work commences and whenever an error is made.

In order for him to become a judge of the
propriety of the entries, he must discover certain character­
istics that differentiate one entry from another. He must
learn the difference between an entry that affects capital
and an entry that affects revenue. As we saw, he learns
this by the criticisms or suggestions that are made by the
senior in examining his work.

One of the advantages to be found in this section
of the work is that most of the errors come to light and
are used as a means of education. However, an improvement
could be made if, whenever an error occurred, he was shown
that it involved a flaw in his reasoning process. He should
never be allowed to lose sight of the fact that he is
establishing the existence and value of a balance logically,
and that every detail of his work has a place in this logic.
He should be aided as much as possible to formulate his
thoughts on the same basis. He should know, when he is
preparing a list of names from share certificate stubs for
example, that he is attempting to corroborate the amount
that is shown on the balance sheet as regards the share
capital of the company, or that he is endeavouring to prove that the company has not issued more stock than it has been authorized to issue.

His work on analysis of accounts is an introduction to that which leads him to a state where a great deal more is expected of him. As the description of the work shows, his analytical mental processes may be given full play, but to receive full benefit he should be conscious of the processes. We saw that there is a tendency for him to imitate, and not reflect upon what he is doing, and suggested that an effort should be made to correct this. We have pointed out that the more proficient he becomes, constructive thinking or reasoning becomes more evident. The process has been from simple learning by trial and error to that where the higher mental processes are involved. We found this demonstrated in our examination of his learning when he is carrying out an audit unaided. We saw that at first he has certain guides to lead him in new work. The procedure that he follows in the arrangement of the papers, he learns by imitation. It would help greatly if the work as a whole could be unified for him when he reaches the position where the picture of a complete audit can be understood.

He learns to draw up financial statements by preparing his master schedules, strictly following those of the year before. That the master schedules are copied
on the final statements is a new discovery for him. As he passes from the performance of one audit to another he may even forget this new discovery, however important it may be. It is clear, then, that he learns this by memorization of a pattern varying in the degree of its complexity and, correspondingly, in the length of time necessary for its assimilation. He should have had an idea of this pattern while he was learning, and carry out the work at intervals not too far apart.

The preparation of adjusting journal entries presented a slightly different mode of learning. Before they are made, they are usually discussed as to their propriety so that, providing he were given enough of them to prepare, he would soon be able to reason them out for himself. Such is not the case. Many of his first audits require few adjustments, and he has the opportunity for making adjustments only occasionally, when he may have forgotten what he previously learned. This, however, is offset by the fact that he is again given the opportunity for discussing and thoroughly considering every entry that is made, both with the person whose accounts he is adjusting and with someone who is senior to him. Certain audits are characterized by the numerous adjustments that it is necessary to make. Others have very few. It would be of advantage if it were possible for the learner to be trained in this exceedingly important branch of his profession
by so arranging his work that he could specialize in making adjustments for a longer period. This is a broad field, for it covers all aspects of accounting knowledge; and, in training the beginner, there are certain principles that should be borne in mind if the most successful results are to be obtained. Though each journal entry is a problem in itself, it has a relationship both to what he is doing and to accounting as a whole that he should understand. If care were taken to indicate this relationship, his knowledge in every respect could be considerably extended. In every case where he has been carrying out detail work, if he has discovered an error, the necessity may have arisen for an adjustment; so that the adjustments have a connection in this way with the detail work and will serve as a further means for establishing in his mind the objects of that work.

The same method of training that has been outlined in connection with all forms of verification work is apparent in the preparation of any written report or letter. When the junior first writes a report, it is usually nothing more than a copy of that which was prepared the year before. After he has written similar reports a sufficient number of times they become memorized, as the form of an unconditional report is stereotyped. Whenever there are variations, they are usually only to be found in a sentence or a paragraph. He learns to write these new sentences or paragraphs and
gradually becomes able to construct a whole report. He could be assisted if he were instructed to write reports from the beginning on the various classes of work that he has been doing. He does not necessarily know what the requirements of the report are, as he follows the last one, but learns gradually after he has become familiar with the form. He should be given an understanding of this before he commences to write the report and after it is completed.

In carrying out a complete audit, the learner reaches a position where he gains a consciousness of the units of his audit and of their general relationship, also the means whereby they are linked together. He does this because he is forced into a position where he must think about all of the work. That consciousness which should and could be arrived at in the actual carrying out of detail verification is acquired usually at this late stage. Had it been possible for him to have developed in the manner suggested, he might be in a position where he could form many of the judgments that are usually left to his principal.

All of the detail work that has been outlined now comes into his province, and he is either doing the work or criticising someone else. Whichever the case may be, he now works with some understanding of a whole audit; and he attempts to relate the parts.

There is little of the work that he has not done before, as far as the actual verification is concerned.
The most singular feature of his learning lies in the fact that he is left to his own resources. We saw that the path he must follow is carefully marked, so that he cannot lose his way. The anomalous situation is that he does not know where he is going, and if these marks were not before him he would be lost. He has little comprehension at first of what he is about to do, and herein lies the main fault in his training. Some attempt should be made to give him a view of the field he is about to cover. At present he follows, one step at a time, his instructions and eventually comes to the end of the path. He does this several times and then realizes what he should have grasped to some extent at the beginning, that everything is related and is part of a carefully planned procedure.
Conclusion

We have observed that improvement could be made in each particular class of work by application of the laws of learning. The law of use could be applied effectively by giving similar classes of work until each class is thoroughly learned. The reactions involved could be strengthened to a degree where the improvement in learning might be made permanent. We have remarked on the failure to observe and apply the law of recency. Too long a period is allowed to elapse in many cases before the learner is given work again of a similar nature. We have observed numerous similar instances of failure to apply the law of disuse. As a result of the student's being transferred to an entirely different class of work, that which he has already learned has been forgotten. If a mental operation is elaborate, the number of repetitions must be greater, and the recency of the attempts must be increased, if the operation is to be sufficiently exercised. We have indicated means whereby a greater number of useful associations could be incorporated into the reaction that is to be exercised. It should be as rich as possible with desirable associations. A more complex pattern will obviously require greater and more frequent exercise. Furthermore, we have seen that through insufficient and infrequent exercise a
lessening in the promptness, sureness, and ease of recall will occur; and that by failure to observe these principles the time already spent on a subject may have been wasted. We have noted applications of the law of effect to some extent in observing that the best results were obtained as a result of a fear of adverse criticism. A desire to produce work of a high grade in order to enjoy favourable comment was also manifest. A desire to avoid errors being discovered had an important influence on the training. We suggested that by giving the learner a greater understanding of what he is doing, still greater benefits might be achieved.

We have shown that the nature of the training tends toward developing the mind without recognition of its active nature. In the preparation of working papers, the tendency was to follow, step by step, without thinking, the pattern of these papers. The work was carried out a sufficient number of times until the form became memorized, without the learner necessarily understanding its implications. We suggested that this condition could be improved, if he were assisted to learn logically. The objectives should be described to him, and their relationships pointed out. He would then keep these objectives before him, and associate each part to them as he worked.

An hypothesis that distinguishes between three different modes of learning – trial and error, imitation
and reflective analysis or reasoning, was found to be convenient in the examination of the training that has been described. The term trial and error learning has been used in a restricted sense, for it can be observed that the process of learning by reasoning is not entirely distinct from learning by trial and error. In reasoning, as in any other form of learning, the solution of a problem is achieved by a process of trials and eliminations of errors, and the selection of the successful or satisfactory means to that solution. Where trial and error learning has been referred to it has been used in the sense of lack of those elements that are manifest in the higher forms of reasoning. The term reasoning has been used to imply that the mind of the individual is more active, and that he is able to draw his information from a wider source, that his efforts are more highly organized, that he has a better sense of direction and that he has, generally, a higher understanding of what is required and of the relationships inherent in his problems.

We suggested methods for raising the standard of training to a plane where the reasoning processes of the mind could be allowed more play and where these processes could be refined. The whole of the work is built up logically. He should be aided in thinking out his work as nearly as possible on that basis which was in the minds
of those who originally prepared the form. The criticism was offered that the objectives of the work and the relationship of the parts should not be left until the learner reaches a condition where he is conducting the work himself. We saw also that, even after he had reached this stage, he still worked to a great extent by imitation until he eventually achieved an understanding that he should have had long before. We saw that the training leading up to where an entire audit is carried out by the individual may be divided generally into two parts—that where he is following written and verbal instructions, and that where the preparation of working papers is involved. In the first case, the errors that were made did not always come to light, so they were of little use as a means of improving his knowledge. In the second case, the errors were usually apparent on the working papers, and could be used as a basis for improvement.

In all the verification we observed that reasoning lay behind the instructions and the forms that were followed. There was always an objective and a logical process leading up to it. The learner is led along this carefully reasoned pathway by these instructions and forms. There is an opportunity for the exercise of his own intelligence within the limits that are thus marked out. He is compelled to follow, one step at a time, a reasoned
pattern as he works, to such an extent that he eventually finds he is doing his own reasoning. The pattern becomes established in his mind chiefly by repetition, not by learning it logically.

An understanding of the significance of each class of work was obtained as an outcome of his attempts to describe and explain it to someone else. The mind reached a higher degree of activity, reasoning became more apparent and his learning became more rapid. He made discoveries at this stage which he should have made when he was doing detail work. This increase in reflective thinking could have been achieved in each particular phase of his work if the training was carried out in keeping with the laws of learning and the principles outlined.

An intelligent individual will finally achieve the objectives of any training, however unscientific it may be. The reasoning processes that lie beneath what is being done will eventually be discovered by him and utilized. If he is to be brought to a better and quicker understanding of whatever he is learning, some effort should be made to assist him through the use of the large, systematically organized body of knowledge which educational psychology has developed.

How much can be gained by a consideration of individual differences has not been dealt with in these
pages. It is sufficient to state that the beginner is selected to some extent on a basis of his past achievements, which may generally be taken to indicate that he is suited for the work. Moreover, his relative ability to learn soon becomes manifest. It is safe to assume that success in this profession correlates highly with intelligence. Something might be gained by an attempt to ascertain, on a scientific basis, at the outset, the degree of the individual's adaptability for the work; but this lies outside the scope of this discussion.

A highly specialized technique was observed in the procedure that is followed; but it is a technique the significance of which relates to the work that is to be carried out and not to the training of the individual. No such carefully thought-out plan exists as regards the training. We have seen the learning of systematic methods of thinking and working by a procedure that is not necessarily scientific.

The criticisms that have been offered are not to be interpreted to imply that the method of training is not effective. It is superior, perhaps, to that used elsewhere, where similar classes of work are involved. An examination of the training received in other fields might disclose still greater shortcomings in those fields. The system of training that has been outlined does satisfy the
pragmatic test - it achieves results of a high order.
An attempt has been made to show that these results can be obtained more economically and in a shorter period of time.
Angell, J.R., 'Psychology, 1908, Chapters 11 and 12

Book, W.F., Learning to Typewrite, 1925, Chapters 1 and 2.


Pyle, W.H., The Psychology of Learning, 1921, Chapters 1 to 8 inclusive.

Thorndike, E.L., Educational Psychology, 1913, Volume 1, Chapter 12.

Woodworth, R.S., Psychology, 1925, Chapters 16 and 18.

No references are given to accounting texts as none appear to be written with the point of view required in these pages. Moreover, nothing has been written regarding the actual training that is described.