A survey of well-substantiated research in several areas of teaching language arts revealed that (1) teaching traditional diagraming is a time-consuming task which does not improve the efficiency or effectiveness of student writing skills; (2) the study of Latin does not necessarily increase a student's English vocabulary or improve his ability to write English or to learn another foreign language, although it may help in his mastery of English spelling; (3) formal grammar instruction or the mere frequency of writing assignments do not aid students in achieving writing proficiency; and (4) spelling instruction need not rely upon rules, emphasize the "hard spots," or dwell upon syllabication, but should adopt the test-study method as superior to the study-test method. English teachers should become more aware of research—its necessity and its results. (JMC)
RESEARCH AND THE TEACHING OF ENGLISH

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It seems to me that on almost any subject there is likely to be more opinion than information. I should like to offer some information today, but, of course, I cannot avoid including interpretive opinions. What I am offering is not THE word but A word, and I can only trust that what I say springs directly from a diligent and largely successful quest for genuine information.

For a period of eight years I devoted spare moments and some moments not easily spared to doing a critical survey of research in several selected areas which I considered important. I sought to discover what, if anything, research had to say about how spelling should be taught, about whether traditional sentence diagraming is a worthwhile instructional technique, about whether Latin provides a road to English mastery, about whether a knowledge of formal grammar or linguistics helps people in their writing, and, finally, about whether practice in writing helps people to improve their skill in writing. Although I cannot give a full report on all these investigations at this time, I should like to review some of the findings and comment about some implications which I think are worthy of the attention of anyone who is serious about teaching English and who considers himself a member of a learned profession. For analyses of the many studies I have inspected, I must refer you to Four Problems in Teaching English: A Critique of Research, which NCTE and the International Textbook Company published recently.

Before I become involved in the details of what I found, I must stress that my purpose was to find out what-we-know or whether-we-know-anything about these subjects. Experiments usually claim results; but are the results reliable and verifiable? Do they tell what they purport to tell? In short, to what extent can the research studies be believed when examined in the light of the research techniques used to obtain the results?

These are obvious questions. But they are also hard questions. Perhaps that is why they have not been asked as often as they should. The typical summary of research in a professional
journal hardly tells more than what a number of people during a given period of time found or claim to have found. Different studies may have contradictory findings. Such information does not help people to decide what to do. All it does is provide excuses for those who want to justify what they have been doing all along.

Do not think for a moment that research can always be counted upon to provide neat answers. Sometimes answers elude even the best efforts to pin them down. Later on, by way of conclusion, I shall speak of the things which I think prevent research findings from influencing teaching. But for the moment it is enough to bear in mind that facts—even when they truly are facts—are not easy to recognize and that research needs to be interpreted. What I have done is interpret the research in the hope of pinning down a few bits of information which appear to me to be well-substantiated and therefore qualify as facts until, perhaps, better information comes along.

This tentativeness on the subject of “fact” is essential to what is called pompously the “scientific attitude.” The study of science in high school or college should demonstrate (if it demonstrates anything) that knowledge is not final. To my generation $\text{H}_2\text{O}$ was a fact about water. But now we know that there is more to the story—that there is something called heavy water which the formula $\text{H}_2\text{O}$ does not reveal. Furthermore, recent findings suggest that there are arrangements to the molecules which can cause water to resemble heavy oil, so that ice and liquid and vapor are not the only forms that water can take. Again, there is more to the story of water than the formula $\text{H}_2\text{O}$ tells. Facts are elusive. In science, nothing is final. All we know is what seems to work under given conditions and what seems to explain why something works under those conditions. In this respect educational research is no different from research in, say, chemistry. What I am now going to report to you is true or factual so far as I know at the present time. It may also be true next year, but I am making no guarantees.

First about traditional diagraming. Fundamentally, there are two kinds of sentence diagrams which have been in use in schools for a long time. These are the formal and the informal diagrams. The informal diagram is merely a series of impromptu arrows, circles, or underlinings which involves no special learning by students. It is used as the occasion arises by the teacher to illustrate rapidly some grammatical relationship, and it retains the linear form in which the language ordinarily occurs. The effectiveness of the informal diagram is not so much a question
of its being a diagram as it is a question of its being a grammatical approach to language problems. But the formal diagram is both a grammatical approach and a definite schematic device intended to achieve a modification of students' use of language. It is the formal diagram which is ordinarily at the eye of controversy and is the subject of a few comparatively recent investigations.

Without exception, the studies find against either the efficiency or the effectiveness of diagraming as a method of teaching students how to write good, straightforward sentences. Experimental investigation began in 1940 with a master's thesis by Kenneth Barghahn which was methodologically weak. Walter Barnett's thesis, in 1942, repeated Barghahn's study with important improvements in method. In 1941, James Stewart completed his methodologically sophisticated dissertation on diagraming. All three studies agree that diagraming is no more effective in teaching language skills than are other methods of instruction. In 1945, Clair Butterfield examined direct and indirect methods of teaching punctuation and found that direct methods are more effective, thereby raising doubts about the effectiveness of other indirect methods such as diagraming. Anthony Tovatt, in 1952, found that diagraming is not used by the overwhelming majority of people when they write and that 38% of his participants who could not diagram claimed nevertheless that when they wrote they visualized their sentences as they would diagram them.

It is better not to teach traditional diagraming. I believe that the studies rightly conclude that diagraming is not a superior method of instruction. The reason for the opposition to diagraming is not that it fails utterly but rather that it imposes unnecessary, time-consuming tasks without conferring any special advantage. Recommending diagraming is like advising someone to count the cows in a field by totaling the legs and dividing by four. Almost anything else would do as well—and in less time.

Just as there continue to be hardy advocates of sentence diagraming, so there are hardy advocates of Latin as a means for improving skills in English. The question is—Is there really a Latin road to English mastery?

The history of the English language provides no reason to suppose that a knowledge of Latin grammar will help one to understand the structure of English and uses it more deftly. English relies primarily upon word order to convey meaning, Latin upon inflection.

But does a knowledge of Latin increase a person's English
vocabulary? There are many English words which come from Latin. But the most commonly used words are of Anglo-Saxon stock. This fact immediately restricts the significance of the Latin component in English. Studies comparing groups of Latin students with groups of English students show a small difference in favor of the Latin students, but not one of these studies allows for the fact that Latin students had a double exposure to language. The Latin students studied Latin and English in school, but the students to whom they were compared studied only English. After one allows for the built-in advantage for the Latin students, then their slight additional mastery of the English vocabulary is remarkable only because it is so slight. Intelligence seems to be a more reliable predictor of students' vocabulary achievement.

Does translating Latin improve students' ability to write English? Apparently not, according to the studies.

Does study of Latin improve students' ability to grasp another foreign language? No consistent experimental evidence in support of this contention was found. Among any group of related languages, the study of one is likely to be of some help in learning another. But no one language has been shown to be of such help that it should be studied because it paves the way for another.

Apparently Latin study did help students a little in mastering English spelling. But the advantage was too slight to serve as a justification for undertaking the study of Latin.

In short, there is no Latin road to English mastery, but, then, neither is there a royal road to geometry, as Euclid is reported to have said to Ptolemy I. The way to master English is the same as the way to master Latin—attend to it diligently, and, if possible, with the help of a good teacher. Any benefit transferrable from the study of one to the other is likely to be a meager reward for one's efforts. Latin should not be regarded as a means to an English end.

It may well be that the most widespread pedagogical theory among laymen and teachers alike is that a knowledge of traditional grammar will help one to use the language, especially in writing. Yet this widespread idea has almost no research support. Among 22 studies conducted between 1906 and 1963, all but one cast doubt upon the efficacy of traditional grammar to improve writing. Among the remaining 21, 2 are superior studies (by Frogner, Kraus) and one other (by Harris) has been listed by Professor Richard Braddock as being among the 5 best studies ever completed in its field.
Rarely does one find studies pointing so consistently in one direction. But of course consistency alone is meaningless, and as Emerson observed long ago, consistency can be foolish. The path of error, no matter how often trod, leads to error. The really germane issue is whether the methods by which consistent conclusions are reached are defensible. Only then is one justified in attaching importance to the conclusions.

What makes the experiments referred to here worthy of consideration is that they are generally well-controlled, their variables are isolated, and their measuring instruments are designed with care. When a good study, like Frogner’s, achieves an objective measurement by using a test, it is possible to complain that a test is a less direct measurement than might be obtained by using the act of writing itself. But such a substitution would increase the chances of a subjective evaluation—which illustrates another Emersonian dictum, namely, that for everything which is given something is taken.

To overlook the valid in a quest for the definitive is also foolish. These experiments, by various means and with such safeguards as were devised, came to similar conclusions. This is not the sort of consistency which is the result of a compounding or repetition of errors. The research techniques do not appear to influence results in any one direction. Nor are the techniques so crude that any result would be suspect. The research is of sufficient quality to warrant the conclusion that instruction in formal grammar is an ineffective and inefficient way to help students achieve proficiency in writing.

As I said earlier, I cannot give a report on all the findings. I shall add two more points before undertaking to comment upon some implications I see. There is a theory which maintains that the way to teach writing is to give students repeated writing jobs to do. Writing teaches writing, it is said. The experimental evidence collected between 1932 and 1965 shows clearly that mere frequency of writing does not produce the desired result. One study, by McColl, in 1963, suggested ways in which writing can be taught without multiplying assignments. According to McColl, teachers should give a weekly writing task and spend 2 or 2½ days upon practical explanations, student practice, discussion, revising, rewriting, etc.

Last of all, I should like to review for you some of the findings about spelling. I spent more time exploring the research on spelling than I spent on any other two subjects combined. There is a certain irony in this because I am not convinced that spelling is the most consequential subject in the world or, for that matter,
ter, in the more restricted world of English teaching. On the other hand, the vast professional literature on spelling suggests that other people attach importance to spelling. Privately I may lament their concern for it and playfully court the idea that the educated man is the one who knows more than one way to spell a word. But ability to spell is a point of pride to some, a sign of culture to others, and a necessary point of conformity to still others (some of whom may be secretaries to people who cannot spell). It does seem that society is going to continue to expect conformity to its spelling conventions and that English and language arts teachers are going to continue to be charged with the job of teaching spelling.

How badly do we spell, really? One study (by Thomas Clark Pollock) presents convincing evidence that—however good or bad we may be at spelling these days—the situation is made to seem worse than it really is because linguistic conservatives decline to accept the legitimacy of alternative or variant spellings. Another study by Donald Emery reveals that even good dictionaries do not agree on the spelling of some words, on what is the usual spelling, and on what is the acceptable variant. Certainly English teachers should remember that the spelling lesson is not the place to indulge their language prejudices.

Still, the question remains—how well do we spell after allowance is made for confusion over alternate or variant forms? Several studies comparing the spelling performance of students around mid-century with the performance of students much earlier in the century show that the students closer to our time consistently misspell more often. This distressing finding may be softened by noting that the studies do not allow for the existence of a more select student population years ago. Nevertheless, students do not, as a group, spell as well as did their predecessors.

A great many studies seek to identify effective methods of teaching spelling. Here are a few major findings.

RULES. After examining the studies and weighing their methodological virtues and defects, it appears that rules offer only limited help in the teaching of spelling. To be at all effective, the rules must apply to many useful words and have few exceptions. Therefore, rules must be carefully selected. Instruction should probably be inductive and follow the test-study plan. Teaching by rule will probably be more effective with the brighter students. Because rules help in only a limited way, it follows that spelling instruction should not rely principally upon the use of rules.

HARD SPOTS. Two kinds of studies deal with hard spots in spelling words. The first seeks to identify the hard spots; the
second seeks to determine whether marking hard spots or drawing attention to them in some way is an effective teaching method. The principal study of the first kind is by Gates, and the principal study of the second kind is by Tireman. The conclusion, after assessing the findings and how they were reached, is that teaching the hard spots is a waste of time.

SYLLABICATION. Does dividing words into syllables help students to improve their spelling. The problem is complicated by the fact that the system of syllabication in present use was established by eighteenth century English printers who did not, unfortunately, identify unerringly the sound segments of the language. At present, there are no investigations of the value to spelling instruction of a linguistically accurate system of syllabication. The studies we have compare spelling instruction without syllabication to spelling instruction utilizing conventional syllabication. Although the findings of these studies are contradictory, the better ones suggest that syllabication spelling words is a doubtful practice.

TEST-STUDY or STUDY-TEST. The evidence here is that the test-study method is superior.

Now I wish to turn away from summarizing in order to comment briefly upon the status of instructional research.

It has become a matter of increasing concern that classroom teachers are very little influenced by instructional research. I would say, for example, that the studies dealing with diagraming and formal grammar and other subjects are unknown to the overwhelming majority of English teachers. Those who do not (for example) diagram do not know about the studies. Those who do diagram do not know about the studies. Some do indeed know about the studies seem to have no difficulty rationalizing a continuation of the practice.

Where does the trouble lie? Physicians do not, as a group, blithely disregard the results of research in their laboratories and clinics. Physicists do not write articles about what-works-for me. Of course, research in the physical sciences has certain built-in advantages over research in the social sciences or in education. I must also admit that a certain degree of skepticism is justified when one considers any research dealing with human behavior. However, a degree of skepticism is different from cultivated hostility to research findings—or apathetic unconcern for research findings.

It seems to me that we are barely beginning to emerge from our Phlogiston Period. When Lavoisier in the 1770's discovered the process now known as combustion, he overthrew the almost
universally accepted phlogiston theory which held that when a substance burns phlogiston escapes. Today, of course, we recognize burning as a process in which oxygen combines with a substance, and this is a process which is directly opposite to what the phlogiston theory claimed to happen during burning. Yet Joseph Priestley (d. 1804), the discoverer of oxygen, went to his grave believing in the phlogiston theory which his colleague Lavoisier had disproved.

There is a clue in this situation which may help us to understand our own problem in gaining acceptance for research findings and methods. When concepts, practices, or theories seem to be useful or have a surface appeal to common sense, they become barriers to the acceptance of new and better concepts, practices, or theories. When long familiarity with an idea generates emotional ties to the idea, it becomes exceedingly difficult to displace it with another idea which actually has more to recommend it. Abstract devotion to truth is as uncommon among teachers, I fear, as it is among other people. Change comes hard.

Some educational research is not worth the ink to print it. Some of it is worthwhile and should command attention and exert influence. Certainly the principle that research is a means for revealing reliable information deserves the respect and adherence of every person who teaches. What is the alternative? To follow the wandering fires of mere opinion? I hope not! Yet how hard it is to breach the walls of dearly held opinion. Recently I received a letter from the head of a department of foreign languages in a high school. She wrote to object to my position on the Latin-English question. Her first point was that her students did not know any Latin or English grammar at the start but quickly learned such things as tense, person, voice, number, case, and subject-verb agreement. Her second point was that her Latin students obtained satisfaction by being able to answer grammatical questions in their English classes. Her third point was that all the English teachers in her school with whom she had spoken agreed that Latin had helped them to master English. Aside from the question of which of us is correct, I think I am justified in saying that we speak from quite different frames of reference. We do not agree on the basic issue of what constitutes evidence.

Fortunately, there are many people whose minds are not yet made up and who are willing to consider the kinds of evidence that scholarship can provide. The future is in their hands. No doubt some will cop out. I am thinking of a very good student I had some years ago who had been carefully educated, who knew the research, who knew what every young teacher should
know. Two years after he graduated he returned to campus for a visit. I asked him how he taught the language. I confess to surprise when I heard him say that he used workbook drills, diagramed sentences, organized his instruction around the parts of speech, gave tests which called for the labeling of words and phrases, and so forth. Where was inductive teaching? Where was most of what supposedly he had learned at college? And why was he teaching this way? Because, as he explained, that was the way it was done in the school where he was employed. And had he done anything to change the way it was done? Well, no, he had not.

To be sure, programs in teacher preparation have also been remiss in not cultivating a concern among future teachers for research. It has been remiss in not encouraging a high valuation of research as a method of discovering truth. I can only hope that this state of affairs will not be with us much longer. There are small signs of improvement. If progress is ever to be made, it will be applied intelligence that makes it.