I was in Washington last week serving on an advisory committee that was looking at a project to teach writing using micro-computers. We were talking about the way various schools were reacting to the microprocessor and to a process-oriented writing curriculum. One of the field sites was a school in New Jersey that was extremely structured. Every minute of the day, every minute of the teacher’s time was carefully accounted for. The people in this school were worried that there wasn’t time to work the microprocessor writing program into the system. Finally they said, "OK, we can have our kids spending an hour and a half one day a week on this writing program, but the students who are using the computer during that period will be missing their reading class. And as a consequence we’ve got a serious problem. Students will have to take their reading books home."

Our people asked what was wrong with that.

The problem was, if they took their reading books home, the teachers were very afraid that they would read ahead.

This really got our curiosity going, and we asked, "What’s wrong with reading ahead?"

They said, "Our reading curriculum is based on research that shows that you can enhance reading comprehension of you make children predict what is going to happen. If the children take their books home and read ahead, then when the teacher asks them to predict, they’ll already know the answer, and this will work against their comprehension."

That story illustrates the way we very often take research, take ideas, take abstractions that have a good deal of potential and slavishly apply them in what we think is an extremely practical way. I’m sure that these teachers felt that they were very practical and that the research on which their comprehension program was based was very practical in the sense of the dictionary definition: capable of being put to use or account.

The problem is that we so often fail to distinguish between knowledge in its abstract form and knowledge in its human form. It can’t be put to use or account in its abstract form. Knowledge has to be humanized to be really usable. This fact is overlooked by many practical people, people impatient with abstractions, people under pressure to make radical changes in education with very few resources. They’re tempted to go directly from abstraction, from idea, from knowledge to practice, without putting that knowledge, those abstractions in a human form. That’s like eating freeze-dried food directly from the package, without mixing it with water and warming it up.

I want to discuss some National Assessment findings which suggest that during the 70’s some of us tried, under the banner of practicality, to take a short cut between abstractions and action, skipping the need to put knowledge into a richer human form before acting on it and imposing it on others. And then having delivered some good news and some bad news about educational achievement in America, and having given you some ironies that you’ll want to struggle with, I want to talk about some research findings that point a way toward renewals, the kinds of renewals that people are asking us to make today. These are findings that I hope we’ll be able to humanize in some form before we apply them. Finally I want to talk about the social context in which English teachers today find themselves, a context in which we hear daily the need for mathematics and science education, because mathematics and science are perceived as very practical subjects compared to English, which is thought to be somewhat impractical and is often appreciated for all the wrong reasons. And I want to close by reminding you of the critical role English teachers can play even today when the emphasis seems to be on science and mathematics, a role that is very practical in the right sense and is needed in the present social context more than ever before.
Let me start by giving you some Assessment findings. The National Assessment of Educational Progress is a federally-funded project which began in the late 1960’s to gather achievement data on a national basis on nine-year-olds, thirteen-year-olds, and seventeen-year-olds. We’ve done assessments in a great many areas—reading, writing, literature, mathematics, science, citizenship, music, art and so on—since 1969 when we first began. I’ll be talking about the 70’s primarily because the first reading assessment was in 1970-71, the next one was in the mid-70’s and the last one was at the end of the 70’s. The mathematics I’ll be talking about spans the center of the 70’s, about 73-79.

We’ve had some time now to look at this data and to generalize about some overall patterns of achievement during that time. It appears that there are some positive findings that we should be proud of and some disturbing trends that have to do with this question of what is true practicality, and how do you apply knowledge without distorting it.

First the positive trends during the 70’s. Among the most dramatic is that during the 70’s we saw major improvements for minorities in American education. In reading at age nine, for instance, black youngsters improved their performance ten points during the decade whereas the rest of the nation’s nine-year-olds improved three or four points. At age thirteen black youngsters improved four points. That’s a lot during this period of time. In mathematics, minorities also made gains at the early age. At ages thirteen and seventeen they held pretty much steady while the rest of the nation declined. The writing exercises that we administered are almost entirely essay: we don’t do our writing assessment using multiple choice questions. In writing, black youngsters improved considerably or held steady while other students in the rest of the nation declined. Same case in science for black youngsters. Hispanic youngsters in reading and in some other areas showed dramatic gains as well, up five points at age nine. Most of these gains are at the early ages in elementary school.

We can point out too that low achievers, the students in the bottom quartile of their class, made rather startling gains during the 70’s as well. There were large gains for the low achievers in reading. They didn’t do much in math, I must say, but there were gains in science.

The third major positive trend during the seventies is that elementary students were improving or holding steady no matter what we looked at. All of those things are excellent indicators of some progress during the 70’s.

At the same time there were some disturbing trends in the 70’s. The first of those is that the improvement was largely in low level skills. We broke the reading exercises into exercises assessing literal comprehension and exercises assessing inferential comprehension and found that the bulk of the gain was in literal comprehension. We found in mathematics that the gains were in computational skills. We found in science that the gains or the stability rested in low level recall of facts about science.

Most of the declines of the 70’s occurred in the higher level skills: synthesis, analysis, evaluation, problem solving, applying knowledge. For instance in reading, the declines were in inferential comprehension, particularly at age seventeen. In mathematics the declines were in problem solving, in word problems, in applying mathematical principles and understanding the principles underlying the algorithms that kids had learned to use rather routinely. The problems in mathematics were also in non-routine problem situations—that is, problem situations that were not ordinarily included in textbooks. In science the declines were in the higher level skills as well: problem solving, exercises in physics and so on, as opposed to the biological sciences. Even more, the higher level skills declines were greater among the high achievers in the school. In reading, for instance, it was the highest two achievement classes that declined the most—four points on inferential comprehension. In mathematics, students at age thirteen were down three points, four points at seventeen. In science, down four points among the teenagers. So the declines during the 70’s were in higher level skills and they were among the brighter students.

Finally, higher level skills that aren’t changing are still at quite a low level. In the report on the literature assessment called Reading, Thinking and Writing we reported that in the analysis exercises that we gave students, analyzing literature, evaluating literature, interpreting literature, about 10 percent of the seventeen-year-olds did very well. About 40 percent had some notion of what to do but did very perfunctory kinds of analyses and evaluations, and the rest were out in left field.

What was happening during the 70’s that might in some way account for those kinds of patterns in achievement? First of all, as we all know, the 70’s were the era of the basics. There was a good deal of disagreement about what the basics really were, but for the most part, basics were defined narrowly. They were presented atomistically and were shaped in terms of what was testable.

Another thing that happened during the 70’s, an outgrowth of the basics movement, was the movement toward minimum-competency testing. It represented an emphasis on low level skills, on minimums, not maximums, and on easily and quickly tested kinds of knowledge. What was not testable wasn’t tested and as a consequence, increasingly it was not taught.

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Another thing that was going on during the 70's that might relate to these patterns is the "dumbing down" of materials, of reading texts, of literature texts—the stripping of vocabulary. There's nothing new to this; it began back in the late 20's in what was then billed as a patriotic effort to help immigrants learn the language by saving them from having to learn cumbersome, seldom-used words that were not on Thorndike's list of the 3,000 most used words in America. There was no point in teaching them these words if research showed that they would seldom use them.

A fourth thing that was going on during the 70's that I think is tied in to some of these achievement patterns is that there was considerable attention to reading. There was a good deal of federal Title I money being poured into schools and districts. There was a Right to Read project which gave a good deal of visibility to reading. But there was no consensus about how to teach reading. The war between the psycholinguists and the phonics people raged all during the seventies, and one of the consequences of the war was a good deal of confusion within districts about how best to teach reading. There was a great deal of atomizing. I've seen some district reading objectives that include well over a thousand reading sub-objectives, each of which had to be taught separately, had to be tested separately, had to be reported on separately. This was not an emphasis in reading that was likely to lead to a love of literature. It was more likely to lead to, and I believe it did, a literalism. And I'm not sure which is worse, a nation of illiterates or a nation of literalists.

A fifth thing that was going on during that period was considerable attention to the needs of minorities, to the needs of people who for years have been left out of the system. One of the ironies about what we're finding is that though that particular emphasis was considered the least practical of all, it appears to have had a good deal of punch. The minorities during the seventies did close the gap. There's still a great deal to be done, but we've made some progress.

All of these activities had a very practical justification. Basics were considered much more practical than wooly electives. Minimum competencies were considered more practical to focus on than maximums. Low level skills, let's face it, are a good deal easier to teach than higher level skills (if teach is the right word; training might be a better word). And low level skills were far more compatible with the existing technology of testing. Testing itself was considered an extremely practical activity, a way of providing information which can be put to use, especially a way of accounting. The accountability movement was big in the 70's.

"Dumbing down" (that's obviously a bad way of describing it; "readability formula application for the scientific delivery of texts appropriate to learner level" is probably a better way to put it) was justified and continues to be justified in very practical terms—if you can't bring the kids up to the material, bring the material down to the kids. Readability formulas, taking abstractions straight through to action, were justified as very practical ways to tame texts. Even atomization was seen as an extremely practical way to go about teacher-proofing materials and getting things done so that human beings did not have to be particularly intrusive in the education process.

During the same period covered by the assessment findings just described, researchers were consolidating a number of other kinds of findings about the optimal conditions for learning. I had occasion not long ago to try to summarize the conditions that research over the last twenty-five years says are necessary for good learning to take place in the schools. These conditions are remarkable for their common-sensicalness. If we want to counteract those unintended side consequences of our attempts to be practical in the 70's—declines in higher order skills, declines among better students—these findings seem to point a way to a kind of renewal. Here are thirteen things that research, and I think common sense, have shown us are optimal conditions for learning.

1. The student is healthy. Healthy students learn; unhealthy students don't learn. Poorly fed students don't learn nearly as well as students with food in their stomachs.

2. Student and teacher trust and respect each other. We didn't have to do a major research study to know this, but a number of people did, and they found that where there wasn't respect, where there wasn't trust, there wasn't learning.

3. The teacher assumes the student can learn and expects the student to learn. No such expectation, no learning.

4. Both teacher and student believe they can shape their worlds. This finding came out of one of the more interesting federal studies in which people were divided into two groups, the crap shooters and the bowlers. Bowlers are people who believe that they can take that bowling ball, run it right down there, and knock those pins down. Their approach to life is dominated by self-confidence and belief in themselves. Crap shooters are people who just sort of throw it out there and say, "I wonder what will happen." If teachers are crap shooters, they're less likely to be able to teach well; if students are crap shooters, they're less likely to be able to
5. Learning is most likely to take place when the student feels relatively free to learn, which includes making mistakes, in his or her unique style and at a comfortable pace according to the purposes she or he sees for doing so. A lot of research is synthesized here but a lot of common sense as well. And let me underscore the business about mistakes. So many people are trying to get the mistakes out of education, to get errors out of education. That’s the very heart of education, isn’t it?

6. Student and teacher spend an appropriate amount of time on the task. The student has time and encouragement to practice. You can’t get it if you don’t practice! Again, practice means making mistakes.

7. The teacher is sensitive to individual student needs and knows enough about the subject to translate concepts into terms that different students can grasp. We all know that the secret of the teacher who’s very good is that he or she has a malleable, a flexible knowledge of the material so that if a student asks a question that’s a sort of curve ball, he or she has a way of addressing it. Teachers who have an extremely narrow command of what they’re doing are unable to do that.

8. The teacher can accurately diagnose problems and imagine ways of meeting them. It’s one thing to say, you’ve got a problem; it’s another thing to be able to diagnose it. This ability and the previous one are significant particularly in writing instruction in distinguishing between good writing teachers and bad writing teachers.

9. The teacher clearly specifies assignments and clearly specifies standards.

10. The teacher receives moral and educational support from his or her colleagues. We found in the writing movement, very often it’s possible to take a couple of teachers out of a school and send them to a Writing Project, a very rich experience, and they go back to the school all fired up. But if their colleagues can’t support them, if they can’t have a dialogue with their colleagues, often they become isolated, and before long there is not a great deal going for them. You’ve got to have moral and educational support, professional support from the colleagues.

11. The school provides a learning environment as well as philosophical and logistical support for all of the above conditions. And that includes inservice training.

12. The school helps teachers learn what they need to know to improve their skills.

13. The parents and community support the school, cooperate with teachers, and minimize demands that interfere with efficient education.

Where a majority of these positive conditions for learning exist, learning is likely to take place. Here then are some principles upon which any individual or social renewal can be based. But they can’t be instituted mechanically. They must be understood in the rich, ecological context of the classroom, the school, the neighborhood.

Will they be so understood? It is an important question to ask right now because of the context in which we find ourselves, in which there is a great deal of ballyhoo about science and mathematics. The renewal we hear about is the renewal of the American economy, the renewal of America’s economic leadership in world trade, renewal of the automobile industry, renewal of (and this is the operational phrase I deal with daily) human capital. It’s always expressed in terms of our need for better mathematics and science education. The human capital they’re constantly talking about are engineers, and scientists, and high tech people. It’s as if a high tech person is like, in human capital terms, a twenty dollar bill. An English major might be a five or a one or pocket change.

English teachers in such a context are sort of impractical, like the penny or the nickel. English is an impractical field; it doesn’t seem to lead directly to a career that anyone wants. It doesn’t seem that English teachers dwell on much besides poems and stories and so on. It doesn’t seem as if they’re very present oriented or future oriented. They seem to be looking at the past and the eternal. It’s acknowledged that they teach some things: grammar, spelling, rudimentary writing, socially acceptable usage, and that they’re performing a kind of social function that people like. They’re upholding manners, the manners of a particular social class. But when we’re praised for this I think as English teachers we often feel we’re being totally misunderstood and appreciated for all the wrong reasons. The practical people I work with—governors, legislators, governors’ aides, legislators’ aides, chief state school officers—they’re all very concerned about mathematics and science because these are supposedly practical fields. They don’t see much of a role for English teachers in this renewal of the economy that they are trying to bring about by investing in human capital. President Reagan has recommended $50 million in mathematics and science fellowships and $300 million for new mathematics and science programs. No one seems to be recommending $300 million to produce a

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new generation of poets, or powerful as opposed to functional writers.

Now we shouldn’t begrudge our colleagues in other subject areas their moment in the sun. Andy Warhol promised us that we would all have fifteen minutes of fame. Our science and math friends got theirs in the late 50’s, and then they lost it, and clearly during the 70’s they didn’t receive a great deal. I think that it’s fair enough that we should look at science and mathematics education again. But neither should we be shrinking violets—you know, "Thanks for the writing money, we really appreciated it, and we’ll retreat now and we won’t ask for any more because we know that our national priorities are elsewhere." I think it’s a good time to reassert the practical consequences of our supposedly impractical endeavor. I think that the solutions to the problems this country faces must come not only from people focused on the short term, the immediate, and the practical. These are the people, after all, who played a great role in getting us into this pickle to begin with.

I think the solutions depend on the input of people with a comprehensive vision, an openness to possibilities, an acquaintance with the past, the best that has been thought and said; people, that is, who are capable of humanizing abstractions. And although English teachers at their worst can be as myopic as anyone, at their best they should be capable of providing unique advice to the body politic as a consequence of their training and experience. Consider for a moment that you are, as English teachers, much closer than other people in a daily, concrete way, to the bone of language, language which structures our cultural skeleton, out of whose marrow the cultural lifeblood comes, the storehouse of the metaphors, whether they’re conscious or not, out of which we build our lives.

English teachers are apprenticed to a literary tradition which is steeped in pleasure and beauty to be sure, but which is built upon the belief that the possibilities of language, personality, and culture are infinite. It is a tradition sustained by countless commitments to the humanizing experience, to the emotions that undergird and constantly transmute the great ideas upon which the culture rests.

To someone raised so close to language and in that tradition, beauty is understood to be central to human experience, not marginal. It’s a source of solutions, not an enhancement of them. So often you hear a scientist say, "The solution to that problem was elegant." Practical people often feel that the beauty follows the fact. But which came first, the solution or the elegance? For those of us raised in the long tradition of defining beauty in terms of integrity, proportion, and clarity, beauty is not just found after the fact, it’s a way to create facts. The manifest trappings of society, the jobs and institutions that everyone is so concerned about now, are meaningless outside of this richer, more human, context.

This experience, the experience of the English teacher at his or her best, is what enables us to forge knowledge into a human form. We cannot isolate mathematics and science from the rest in order to save our country; that would be fruitless. Isolating education from the rest of society itself is likewise futile, and denying, as Robinson Jeffers said, that the past is future is a self-denial akin to suicide. Without those who perform the essential humanizing function of remembering—and that’s you—any of the principles which we know will make education work and which can lead to economic renewal is capable of being put into practice as it was in that New Jersey school I spoke about when I began.

With your help, with your insistence upon putting in on all this science and mathematics talk whether you’re invited to or not, there’s a better chance, I think, that the changes made to improve education in America will have more positive results and fewer undesirable, unintended consequences.