

Our Goal: Better Education for More Pupils

"If our schools and colleges can learn how to make more effective use of their very best teachers and learn to use other people to perform some tasks now required of teachers, the quality of education in the years ahead can rise to new levels."

EVERYONE now knows that the Nation's schools are crippled by a severe shortage of teachers, and that our colleges and universities will face a similar or even greater shortage in the years ahead. But the *implications* of the shortage are not widely understood, and the alternatives open to our schools and colleges in meeting the shortage are too often clouded in clichés. My purpose in this article is to try to clarify the acuteness of the problem, to outline the alternatives for dealing with it, and to suggest an approach that might transform what seems to be an insoluble dilemma into a challenging opportunity to provide a better education for more of our young people in the decades ahead.

By any reasonable standards we should have a fully qualified teacher in every classroom. Under present conditions both in and out of school this is an impossible goal and so we must look for other solutions. We never have had fully qualified teachers in every classroom anywhere or at any time. At best we have had fully certified teachers, which is something very different.

To get fully certified teachers we have accepted, into teachers colleges and other colleges which prepare teachers, a great many individuals of such limited endowment that no amount of education can

make them anything but trained mediocrities. To expect such persons to be all things to all pupils is again expecting the impossible. If we continue to insist on fully certified teachers with the present certification laws in the face of a greatly increased demand, we shall have to lower the standards within the programs still further. Is this the course we wish to follow?

The reasons for our present teacher shortage are much easier to explain than to remedy. Briefly, they are that today's new teachers come from the "thin" generation born in the 'Thirties, when the birth rate dropped to a record low, while today's new pupils come from the bumper crop of babies born in the 'Forties, when the number of births soared to record highs. This has led some people to argue that if we wait long enough the teacher shortage will solve itself, because when today's students begin to graduate from college they will substantially expand the manpower pool out of which tomorrow's teachers will come.

The trouble with this argument—aside from the fact that it would condemn half a generation of young Americans to a poor education—is that it ignores two crucial factors in the teacher supply and demand equation of the future. To begin

with, the steep rise in enrollments is not a temporary phenomenon. The greatest rise in births has occurred in the past five years, and the babies born during that period—nearly 20,000,000 of them—haven't yet *started* to school. The more than 4,000,000 babies born last year will not reach kindergarten age until 1961; they will not finish high school until 1974, and those who go on to college will not graduate until 1978. *In short, the children who are already born will tax our schools and colleges for at least 20 years to come.* No one can confidently predict the future level of births, but when the bumper crop of babies born since the end of World War II start having babies of their own, a new upswing seems inevitable. There is every indication that schools and colleges are moving toward a *permanently* higher level of enrollments.

Another factor overlooked by those who argue that the teacher shortage will eventually solve itself is the over-all shortage of highly educated people in all fields of human endeavor, and the phenomenal rise in the demand for such people generated by economic prosperity and technological change. In the United States today there are thousands of college-educated people who are working at jobs that did not exist 25 years ago, and 25 years from now there will be additional thousands working at jobs that do not exist today. For example, an official of International Business Machines predicted recently that more than 10,000 of IBM's electronic data processing machines will be in use in the United States within the next 10 years, and that more than 170,000 professional people must be trained to operate them. "That is a professional group larger than the American Medical Association," he pointed out, "and we have less than a decade to build it up."

Peter Drucker, the well-known management consultant, wrote in an article on "The Promise of Automation" in *Harper's* a year ago that automation alone will generate such a demand for well-educated people "that the eight or ten million college students we can expect fifteen years hence will be barely sufficient."

These are only two samples of the handwriting that is beginning to appear on the wall, and we can ignore it only at great peril to the future of our society. The fact of the matter is that we will need more poets and philosophers, as well as more scientists and engineers, more statesmen as well as more teachers, and all of them will have to come out of a limited supply of top-quality manpower upon which the demands will continue to grow. In the vigorous bidding for an adequate share of this short supply, teaching finds itself at an increasingly competitive disadvantage.

What are the implications?

At existing pupil-teacher ratios we need nearly 2,000,000 new teachers for our schools over the next 10 years. It would take more than half of all college graduates of every description during the same period to meet this need. It is extremely doubtful whether our schools can—or should—attract anything like half of all our college graduates to meet their need for new teachers. In recent years, they have been getting only about one-fifth.

Our colleges and universities would require an even greater relative expansion of their teaching staffs in order to maintain the existing student-teacher ratio. There are fewer than 250,000 college

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teachers on the job at present, and there would need to be more than twice that many by 1970. To achieve this expansion and to replace those who leave, our colleges and universities would have to recruit more than three new teachers for every two employed today.

Prudence tells us that our schools and colleges are not going to be able to recruit anywhere near that many *top-quality* teachers in the years ahead, even when college graduating classes begin to expand above their 1950 level. Danger signals are already flying. Here are some examples:

A recent NEA survey revealed that every state in the Union is short of qualified teachers and that only one state—Kansas—expects its teacher-education enrollment to be sufficient to meet its needs over the next three years.

The number of college graduates who enter teaching each year is not enough to replace the teachers who leave.

The number of "emergency" teachers—those teaching without standard certificates—has risen from 70,000 in 1952-53 to 80,000 this year.

Educational deserts are being created in many sections of the country, notably in the Midwest, where communities are losing their best teachers to other areas and are having to replace them with unqualified teachers.

More than 800,000 public school children are being deprived of a full-time education by the shortage of teachers and classrooms.

The pinch also is beginning to be felt at the college level. An NEA survey showed that 618 of the 644 responding colleges and universities were beginning to experience a shortage of qualified teachers in one or more fields, and that 246 of them had one or more unfilled positions because of the lack of acceptable candidates.

If our schools and colleges choose the alternative of trying to keep teacher-pupil ratios low by hiring more *mediocre*

teachers, the inevitable result will be a steady deterioration in the quality of education. As the late President Johnson of Fisk University so aptly put it, "Keeping classes small by hiring poor teachers simply enables the teacher to communicate his mediocrity in an intimate environment."

New Ways of Improving Teaching

The issue, then, is really this: Will we persist in our efforts to keep pupil-teacher ratios low by hiring mediocre teachers, and thereby lower the quality of education, or will we seek new ways of increasing the effectiveness of broadening the reach of our really outstanding teachers, so that more young people can receive a better education in the years ahead?

But, it will be argued, even with fully qualified teachers the quality of education is bound to deteriorate if class size is increased. Is our choice then deterioration with small classes and mediocre teachers as against deterioration with large classes taught by fully qualified teachers? My answer is no.

If our schools and colleges can learn how to make more effective use of their very best teachers and learn to use other people to perform some tasks now required of teachers, the quality of education in the years ahead can rise to new levels. A better use of professional and nonprofessional talent with a readjustment of class schedules can provide for more stimulating group experiences and at the same time more individual attention.

Learning involves much more than the mere physical presence of a teacher and his students in the same room. It occurs only if the teacher is having a genuine effect on his students—their attitudes,

their excitement for learning, their knowledge, their interests, their perspectives, their feelings, their ability to solve problems, their outlook on life, their skills, or any other factor that is causing or stimulating the students to develop. If the teacher is incompetent, uninspiring, and lacks understanding of children, not much learning is likely to take place.

On the other hand, a superior teacher with as many as 100 or more students in a classroom—or with 25 students each in four classrooms—may establish significant individual relationships with a large proportion of the group and stimulate them in their learning far beyond anything that might happen in a face-to-face, one-to-one relationship with a poor teacher. The student-teacher ratio, then, needs to be reconsidered from the standpoint of the number of effective relationships with individual students the superior teacher can actually establish, regardless of the size of the class.

The student-teacher ratio also needs to be considered in relation to the objectives of instruction in different learning situations. If the aim is to impart and interpret knowledge, the extent to which a teacher can reach students either directly or through some mechanical aid is the only limitation. The printing press, for example, has made an enormous contribution in enabling the ablest scholars and writers to reach vast numbers of students. Television has an even greater potential for a superior teacher. If, on the other hand, the aim of instruction is to give students an opportunity to exchange views among themselves or with an instructor, or to raise questions, there are obvious limits to the size of a class where this can occur effectively. This fact has long been recognized in colleges and universities, where students are brought together in large classes for

lectures and in smaller sections for discussion. If the aim is to develop a skill as in writing, explanation and demonstration may call for one type of arrangement, and practice for another. If the aim is to give the child a sense of security in school and confidence in himself and his abilities, a mother assisting a teacher might be far better qualified to perform this service than the teacher herself. The point here is that optimum class size varies with different kinds of learning situations and with the people involved. The most important consideration is the quality of the teacher and others who may assist the child in his development.

Many schools and colleges throughout the country have embarked on promising experiments in extending the reach of their best teachers. In Bay City, Michigan, and in some 20 neighboring communities, the schools are demonstrating that teacher's aides can help the good teacher to reach more pupils, and more effectively. The aide relieves the teacher of such routine chores as collecting milk money, writing on the blackboard, and rearranging the furniture, thereby freeing the teacher to make better use of her unique professional talent—teaching. The teachers in the experiment, as well as the pupils and their parents, have been pleased with the results. (On the basis of a staff report the Bay City Board of Education has decided to continue the plan indefinitely beyond the experimental period.) Contrary to expectations, the teachers found that they could give more individual attention to their pupils in the larger classes, with an aide to relieve them of nonprofessional chores, than they ever could in conventional-sized classes without an aide.

The Bay City experiment operates on a principle that is widely recognized and used in other professions—namely, that

the trained expert seldom works alone because he can increase his effectiveness by the proper use of assistants—and has clearly demonstrated that this principle is also applicable to teaching.

A variation of the Bay City idea is being tried in Fairfield, Connecticut, Newton, Massachusetts, and in other places scattered across the country where teams of teachers with various competencies are pooling their skills to reach larger numbers of students.

Perhaps the most promising way of extending the reach of the outstanding teacher is through television, and a growing number of schools and colleges throughout the country are exploring its potential with amazing success. One of the most striking of these experiments is under way in Washington County (Hagerstown), Maryland, where some 18,000 students in 48 schools eventually will receive some of their instruction by television. This instruction will not be by explanation alone. Plans are under way to bring the educational and cultural resources of the county into the classroom by means of television. Another exciting experiment is under way in Pittsburgh, where one of the nation's superior physics teachers is now teaching a course in the subject to high school seniors—not only in the public schools, but also in the parochial schools of Pittsburgh and in the schools of nearby communities in Allegheny County. In the meantime, his talks and demonstrations are being recorded on color film, and the full course will eventually be made available to other school systems.

Television, coupled with the possibility of freeing more teacher time for individual attention to pupils, makes the whole issue of class size archaic. Television and other means of modern communication now make it possible to bring

the *greatest* teachers to every school and college, just as the printing press made it possible to bring the greatest writers to students throughout the world.

Does this mean that instructors on film or over television will or can replace all the work now being done by school and college teachers? Not at all. It simply means that some forms of instruction and demonstration—not all—can now be carried on much more effectively by our greatest teachers. The classroom teacher will still have plenty to do—devoting more time to work with individual pupils, in leading discussions, and in other aspects of the total job of enriching the education of each child—but even these aspects of teaching can be more exciting, more challenging, and more rewarding.

Exciting days in education lie ahead. If the problems of mounting enrollments are met in routine fashion merely by trying to employ enough teachers to maintain a constant arithmetic ratio that no longer has any meaning, the quality of education in the United States will rapidly deteriorate. If, on the other hand, we learn to use the means now available for extending the effectiveness of our best teachers for supplementing their services with the work of others, and for pooling their combined skills and competencies, then pupils throughout the land will receive a much better and richer education in the years ahead. Hand in hand with this can come much greater financial rewards for our teachers, long overdue.

The basic question, I believe, is whether we can exercise the same ingenuity in education as we have in other areas of American life. I am confident that we can, and that in the process American education can attain new levels of quality in the face of rising numbers.

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