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Quality In Education: A National Necessity

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Credentials Dr. Webb

Feb 15 '58 [illegible] scramble

I Subject - Quality in Education
- a Nat. Necessity.

1. Much discussed since America's "Scientific Pearl Harbor"
2. Some unfair criticism
3. But critical review - wholesome
4. All education - primary, secondary, college

II. Threshold of "Space Age"

1. Read #2 - Lyndon Johnson
2. But America's danger is not as remote as "outer space"

III. Comparative - Military-Scientific Capabilities

1. Review these for "perspective"
2. U. S. ahead in certain ~~the~~ areas
3. Long-range ballistic missiles

IRBM { Thor
Jupiter

ICBM { Atlas
Titan

4. Allen Dulles : Bases "operational & on site"

5. Satellites

Explorer { 30 lbs
83,000 lbs thrust

Sputnik { 1126 lbs.
500,000 lbs. thrust

6. Wernher Von Braun

20% greater rate of progress
5 yrs to catch up!

Subs - 6A Subs

7. America thus faces greatest danger in history - both short range & long range.

Dr. Edward Teller - emergency greater than P.H.

IV. Must We Stay in Weapons Race?

1. Russia's record
2. Khrushchev boast - brag vs.
3. No sane man
4. Then - doomed for decades.

V. Unique Position of Forbes Road

VI. Our Educational System must be critically Re-examined

VII. Soviet Education - our Competition

10 yr - 6 days

Science { 5 - Physics
4 - Chemistry
1 - Astronomy
5 - Biology

Science 6% vs 2%

Math - 10 yrs

50% of total in science & math

5 yrs - Foreign Language

Talented Children

VIII. American Lack of Emphasis on Science

Folsom - 1 out of 3 have one yr Chemistry
1 out of 4 have one yr Physics

Our program - dying
Years of Industrial Revolution
- not Science Revolution

Not Color Russia

IX Need for Quality

1. Not only in Science
2. But in all phases of education.

Must have educated economists, philosophers, business leaders - and most of all statesmen.

X. More Diplomas & Less Learning

1. We have mass education but not quality education
2. Why?

XI Public's Sense of Values
largely responsible

1. Hard work - no longer virtue
2. Half back - nuclear physicists

XII. Critical Questions about American Education

p 13 — Read

XIII President Griswold's Example

Eng IV
Journalism
Speech
Personality Problems
Marriage & Family
Chorus

Dean De Vane ideal:

4 Eng
4 Language
3 Hist
3 Basic science
4 Math

XIV Our Program in Richmond

1. Been speaking generally - about National problem
2. We have good schools here
3. But no room for complacency - can improve

XV Our Part of National Defense Program

President Eisenhower:

"National security requires prompt action to improve and expand — teaching of science & math"

Next year - $1 150,000

XVI. Equally concerned for need to improve over-all quality.

1. 5 Year High School
2. Fewer electives
3. Review of Curriculum
4. 3-yr terminal program for 50% who drop out.
5. Guidance & testing
6. "Advanced Placement"
7. Gifted Pupils
8. Program for technical and semi-professional positions

There are proposals

(8

XVII. Position of Our Teachers

1. Another speech

2. We have splendid faculty.

→ 3. In-service training

meeting Monday

4. Track Drivers

XVIII Conclusion

Read

Quality in Education

A National Necessity

Prepared for Delivery by

Lewis F. Powell, Jr.

Chairman, Richmond (Va.) City School Board

to

Richmond Public School Teachers

February 1958

education is quite fine, but that it would succeed more surely if the status of the teaching profession were properly recognized. I am sure you know that I agree with this thought. I would like to make it the subject of another speech, as America must realize that the soundest investment we can possibly make in the future of our children is to have the highest quality of teachers. Obviously, this can not be attained with salary levels lower than those of truck drivers, and with more money being spent on advertising than on public school education.

Conclusion

It is evident that America faces — for an indefinite period of years — the gravest threat to our very national existence. In our entire history, there has never been a threat of comparable magnitude or duration. As it lacks the dramatic character of a shooting war, there may well be doubt as to whether luxury-loving, easy-going America will appreciate the danger and make the sustained effort and sacrifice necessary to avert it.

It is therefore all the more essential that education performs its broadest mission. We not only must educate future generations so that they will have superior ability in the requisite fields of human knowledge, but we must educate the American electorate so that the masses of our people will understand, appreciate and take appropriate action to meet the challenge of the space age.[11]

[11] As the President's Committee on Education concluded its recent report: "World peace and the survival of mankind may well depend on the way in which we educate the citizens and leaders of tomorrow."

the approximately 50% of our pupils who drop out before graduation; (5) a broader and more effective guidance and pupil appraisal program; (6) sharply increased emphasis on the present "advanced placement" program, with a determination to identify, motivate and accelerate gifted pupils; and (7) the need for some sort of terminal program to prepare non-college bound students for technical or semi-professional positions.

You, as professionals in this exciting business of education, will know much better than I whether, and how soon, we can effectively accomplish the foregoing program. I personally think we can and should undertake it without delay.

The Position of Our Teachers

Before concluding I want to speak, quite briefly, about the teachers' side of this equation. The best program in the world is no good unless we have qualified and inspired teachers to implement it. We here in Richmond have one of the finest school faculties in the United States. This is the opinion of our internationally-known Superintendent and others familiar with your work. It is also supported by the record of your graduates.

But in this new and incredibly fast-moving age, knowledge and techniques which were adequate last year may well be obsolete today. It will therefore be necessary for our teachers all over America — and especially those in science, mathematics and languages — to keep abreast of current knowledge. This, you already try to do by your summer work, by following closely the literature in your field, and in various other ways.

We also have plans to assist you in this essential task. These include a program of summer "workshop" or seminar sessions, the first of which is being organized for this summer in mathematics. The School Board and Superintendent meet on next Monday with some forty business and civic leaders whom we believe will cooperate by providing funds and manpower to assure maximum success of this in-service training program for the entire Richmond area.

Many of you are no doubt thinking that this broad program to improve the quality of our

QUALITY IN EDUCATION — A NATIONAL NECESSITY

It is a privilege for me to have this opportunity to address such a large group of our Richmond teachers. Regrettably, School Board members are usually preoccupied with their duties prescribed by law. I am afraid we spend too much time on buildings and budgets, and too little time on the fundamental question of the quality of education in our school system.

Recent events have forced us all to do some hard thinking about this question. Indeed, since America's scientific "Pearl Harbor" of last Fall, almost everyone who makes a speech or writes an article — from the President down — talks about education. I am not, therefore, being very original in speaking on this subject today. Despite some of the uninformed, and at times unfair, comment and criticism now being expressed, this awakening of critical interest in our educational system is the most wholesome and encouraging event of this decade. I say this because it is becoming increasingly clear that the ultimate fate of the free world may well depend upon whether American education — and I here speak of our colleges and graduate universities as well as our elementary and secondary schools — responds successfully to the Soviet challenge which is now so evident.

This challenge dramatically manifests itself at this time in Soviet scientific superiority in areas which terrify the world. In the longer view, this challenge poses the dread possibility that Communist Russia will gain control of outer space and use such control to subjugate the world. As Senator Lyndon Johnson said, after many weeks of testimony before his Senate Subcommittee on Preparedness:

> "The testimony of the scientists is this:
>
> "Control of space means control of the world, far more certainly, far more totally than any control that has ever or could ever be achieved by weapons, or by troops of occupation.
>
> "From space, the masters of infinity would have the power to control the earth's

The situation with respect to the intercontinental missile is no more reassuring. We have actually launched only two of these successfully, and these were limited experiments not involving the principal rocket engine. By all estimates, we are several years from being operational with what could be the decisive weapon of history.

America Remains Behind In Satellites

To this point, by the exercise of the utmost restraint, I have refrained from mentioning Sputnik. But no speech at this time—and indeed few conversations—would be complete without some reference to this new word in our vocabulary. At long last, we now have our Explorer, and we all sense the feeling of relief which already is lulling many people into complacency. Indeed, I heard a nationally known news commentator jubilantly boasting that because Explorer goes a little faster and a little farther into outer space than either Sputnik, we have demonstrated a potential military capability beyond that of Russia. This is the sheerest nonsense, and talk of this kind could not be more harmful if it were inspired and paid for by the Russians themselves.[5]

The individual chiefly responsible for our Jupiter-C successful launching of Explorer is Dr. Wernher von Braun, the German-born scientist who was also responsible primarily for the German V-1 and V-2 of World War fame. Few people are better qualified to comment upon our position in the missile field. Dr. von Braun is quoted as follows:

> "Let us remember that Sputnik II had 1,126 pounds of pay load (as compared with 30 for Explorer).

[5]Explorer weighs about 30 pounds, and the Jupiter-C engine which launched it had a thrust of 83,000 pounds. Sputnik II weighs 1,126 pounds — some 37 times as much as the American satellite — and is believed to have been launched by a thrust of approximately 500,000 pounds! The military significance of the Russian advantage in rocket power is obvious. Testimony before the Senate Subcommittee also indicated that Russia is developing a rocket engine with a thrust of 1,000,000 pounds — far in excess of any engine which we have even on order.

colleges have generally failed to prescribe a sufficiently challenging curriculum and insist upon a sufficiently high level of performance by faculties and students. As someone has said, the emphasis in America has too often been upon "more diplomas and less learning."

There are, of course, many exceptions to these generalizations. Indeed, I think we here in Richmond have for the most part provided good quality education — certainly when compared with national averages.

No doubt, too, the quality of American education largely reflects the public's sense of values. Hard work is no longer considered an American virtue. When the average parent is demanding less work and more leisure, it is difficult for the schools to expect Johnny to work harder and longer. Nor is scholarship widely acclaimed. The football coach is often paid more than the college dean, and most alumni had rather subsidize a star half-back than a brilliant nuclear physicist.

But whatever the reasons may be, I suspect that many of you — concerned about the quality of our education — have frequently asked yourselves questions such as the following:

1. Have the curricula of schools and colleges been designed to produce soundly educated men and women?
2. Has there been proper emphasis on the liberal arts and pure sciences, as compared with the "practical" vocational and "social adjustment" courses?
3. Have the text books, like the curricula, been watered down to make things easier for the average "I.Q."?
4. Has the elective system been abused?
5. Have standards of performance — even in the easy subjects — usually been too low?
6. Have our teachers — including those who believe most in quality education — assumed responsibility for motivating and stimulating their pupils?
7. Has there been sufficient emphasis on teaching children and young adults to *think* — as contrasted with giving them a smattering of information about a wide variety of subjects?
8. Has our education been "over-democratized," with the result that curricula con-

The Russians also place great emphasis on recruiting and training qualified teachers. Salary levels are higher than in America, and teachers and scientists enjoy a status and distinction commensurate with their contribution to society and national policy. In terms of the familiar yardstick of money, Russia devotes 6% of her total national income to education as compared with only some 2% spent on public education in America.

American Lack of Emphasis on Science

In contrasting the limited science and mathematics training in American elementary and secondary schools with that in Russia, Mr. Folsom, Secretary of Health, Education and Welfare, recently pointed out:

> "Studies indicate that only one out of three (American) high school graduates has had a year of Chemistry, only one out of four has had a year of Physics, and only one out of three has had more than one year of Algebra."

Ours has been a program geared — none too well — to the dying years of the "industrial revolution." Its emphasis has become obsolete in the "science revolution" which commenced in the mid-twentieth century.

Despite this obsolescence, it is fashionable to say that we must not—in panic—copy the Soviet or even the European system of education. Of course we should not. But I fear that many who thus warn us, fail to appreciate that unless we match and better it in the physical sciences the Soviets, as our rulers, will some day force upon us the entire Communist way of life.

The Need for Quality

Of greater concern than the quantitative inadequacy of American education in mathematics and science, is its apparent weakness in quality.[7] And this question of quality or excellence in education goes much deeper than any one or more elements of the curricula. Our schools and

[7]Presidential Science Advisor Kellian, recently declared at Yale, that "our manpower shortage in science and engineering has been and will continue to be more one of *quality* than of numbers."—*Wall Street Journal*, Feb. 4, 1958.

> "If we should attain a rate of (progress) 20% greater than theirs (Russia's), it would still take 5 years to overtake them."[6]

Other Defense Problems Related to Science and Engineering

I will not trespass on your time to discuss other defense problems of this "science age." I will only mention some of them: (1) Our present radar system is totally incapable of warning us against ballistic missiles; (2) the requisite kind of radar warning is considered feasible, but is several years off; (3) work has commenced on an "anti-missile missile," but this is years in the future and then would probably have limited effectiveness; (4) we have no shelters to protect our people and vital supplies from nuclear fallout and radiation, a deficiency which increases our vulnerability to Russian blackmail; and (5) when Russia succeeds in combining nuclear propulsion with submarine launching of ballistic missiles (as she undoubtedly will), America will be confronted with a further weapon of the gravest potential. With all of these problems, I have not mentioned "nerve gas" warfare, or the possibility of countless other unimaginable weapons which the science revolution and the space age are certain in time to bring.

Must We Stay In the Weapons Race?

By this time, I suspect that some of you are wondering why I have wandered so far afield from my subject of the need for improved education. Others, perhaps, are wondering whether the sorry fate of mankind is to continue this senseless weapons race to its bitter end. The answer to the second of these questions will suggest the answer to the first. America most certainly must continue in the weapons race so long as Russia wishes to impose its will upon the world by force. When the appeasers and pacifists suggest another course, let them remember Russia's brutal record of conquests commencing with the Baltic states, including partition of Poland, seizure of East Germany, subjugation of other eastern European nations, the unprovoked wars in Korea and Indo-China, and

[6]As the New York *Times* recently stated, Explorer is a "dwarf" compared with Sputnik II.

the tragedy of Hungary. Krushchev has at least been frank about all of this. His boast is that at the proper time he will "bury" the western democracies.

In these circumstances, no sane man can recommend any course other than keeping America strong enough to deter Russian conquest. How long this unhappy situation will last — even if we are successful — is a question no one can answer. It may be a decade, but more probably it will be a half a century before the Communist Party loses its fanatical zeal and the Russian people have leaders whom the world can trust.

America's Unique Position of Forbearance

It may be pointed out here that America occupies a position of forbearance completely unique in the history of the world. Since 1945, when we developed the Atomic Bomb, we have had the undoubted military capability to defeat Russia. Until two or three years ago, this could have been done with relatively little risk to America. But the idea of a preventive war is so abhorrent to our peaceful and idealistic people that we were never willing to use our manifestly superior strength to impose our will upon Russia. We were unwilling to do this even though we knew perfectly well that Russia was frantically arming itself to destroy us.

There is little likelihood that this unique and Christian policy will be reversed, and thus we give Russia an appalling advantage. We give her complete sanctuary from attack; we permit her to continue to arm herself; and we leave her with the initiative, which means that her rulers will have the power to destroy (it is estimated) more than half our population before we fire a shot.

Our country is therefore faced with the grim and disheartening necessity of trying — for an indefinite period of years — to stay far enough ahead of Russia so that our retaliatory capabilities will deter her from attacking. This task must, of course, be accomplished within the framework of our democratic institutions and without straining our economy to the point of national bankruptcy.

All of this obviously imposes an enormous responsibility upon our educational system. This would be true in any age, but it is especially meaningful as we enter the space age with its limitless opportunities for both good and evil. This is why our educational system must be critically re-examined, having in mind that the children now entering our primary schools will be the leaders — in science, economics, philosophy and statesmanship — who may well lose or save America decades hence.

The Soviet Educational System

But before considering the adequacy of American education as the basic foundation of our national security, it is well to know what our competition is doing. The United States Office of Education released last fall its definitive study of Russian education. It is a revealing and disquieting document, as it confirms the existence of an effective program totally geared to Soviet policy of world domination through scientific and engineering superiority.

I will mention briefly the significant facts with respect to Russian elementary and secondary education:

1. A 10-year compulsory program, 6 days per week for more than 200 days per year.

2. Required work in science includes 5 years of physics, 4 of chemistry, 1 of astronomy and 5 of biology for those who qualify.

3. Required work in mathematics includes 10 years, of which 5 years are in algebra and trigonometry.

4. Fifty per cent of the entire 10 years work is devoted to sciences and mathematics.

5. At least 5 years of a foreign language, usually English, are required.

6. A skillful blend of compulsion and incentives stimulate the gifted students; and assure intensive training in the fields of their special competency.

7. High standards of achievement, maintained through regular and rigorous examinations, weed out those who "can't or won't" after the seventh grade. These are then placed in trade or vocational schools compatible with their ability and the needs of the State.