

# *The Scientist Looks at Values*

K. RICHARD JOHNSON

Does modern education prepare children and youth for the realities of a world increasingly dependent upon science? This question is discussed by K. Richard Johnson, President, National College of Education, Evanston, Illinois.

MODERN education has been attacked all too often during the past few years and especially during the past few months by those who may not understand the true meaning of its principles. It is my privilege to be president of an independent teachers college that has been, from its beginning sixty-five years ago, an advocate of forward movements in education. My academic background included a great emphasis on the sciences. Also, I have become profoundly interested in the evolutionary development of modern education. In the light of my scientific background, I wish to re-appraise our philosophies and to see whether or not the content of modern education is preparing children adequately for the realities of the world in which they are to live as adults.

Are our schools today strengthening the "traditional American values"? If there ever was a time when we needed mature and emotionally stable individuals coming out of our schools, it is the present. International tensions are felt throughout the world and quickly are reflected in the patterns and behavior of children and adults as well. It is most important that we do not lose sight of the potentialities of the rich American heritage that is ours and that we do not permit our faith in democ-

racy to be weakened by the vicious and often subtle propaganda that tries to undermine it.

Anyone who delves thoughtfully into our early history quickly recognizes that the pioneers who settled our great land understood the importance of hard work, had confidence in themselves and in the future, and were self-reliant. It was largely because of their faith in what the future held not only for themselves but for those generations that would follow that these individuals were able to remain courageous innovators of new ideas. These traits were necessary in the early days of our history and are just as much needed today. We often take our heritage for granted until some power either internal or external acts as a catalyst in making us feel responsible when we see that the security of our society is in danger. Teachers must be doubly sure that fostering and preserving these "traditional American values" are the objectives of our society and of our schools, since in the schools we are preparing the future voting citizens of our country.

## **Teachers Need Breadth of Knowledge**

It is important that teachers of today have breadth of knowledge to make life richer for the youngsters with

whom they work as well as for themselves. Today's children have an amazing amount of knowledge of science and social affairs. Children of the elementary grades talk of jet propulsion, atomic energy, uranium and nuclear chain reactions. They speak of penicillin, sulfa and isotopes. Geographic areas that a decade ago were scarcely heard of in adult conversation are very real places to children now because their fathers have spent long periods of time in them. We are living in a rapidly changing world, and if we are adequately to meet the needs of children and youth, we, as teachers, must meet the challenge of the times.

Teachers and students must develop a world vision. We have evolved a long way in the field of science in modes of air transportation and communication. With jet planes it is possible to circle the globe in a few hours. The harnessing of chain reactions has made it possible for the most destructive of all weapons to wipe out cities in a few seconds. Recent discoveries in our biological laboratories make us shudder when we see that it is possible to destroy large sections of populations through biological and climatological warfare. Nations are still trying to reach an understanding as to how atomic energy can be controlled, but as yet we have not heard of a solution. Man's knowledge can lead to his own destruction if the use of that knowledge lacks a control.

As we emerged into the "Air Age," geographic barriers became a thing of the past. Few spots on this planet can be referred to as "isolated." Science knows no boundaries, and nations cannot isolate themselves. Scientists of the

world have exchanged their knowledge, and out of this world-wide intensive search for truth has come the discovery of atomic energy.

### **Scientist Needs Courage and Tolerance**

The scientist has often been blamed by laymen because modern war has become so terrible. It is not the fault of the scientist that mankind has made such destructive use of his inventions. Scientists have sought to understand nature and the universe, and with them the practical applications have been secondary. In this fact there is hope for mankind. The true scientist has courage and is not bounded by ancient tradition, and he soon develops a spirit of tolerance in that he knows there is no monopoly on truth. The true scientist is also humane and is concerned with the future of mankind. At the time of the research on the atomic bomb it was reported that many of the scientists hoped that no such thing as an atomic bomb would be possible. It is hoped that as more is learned about the behavior of atoms, the potential power held within them can reveal the secrets of healing of the so-called incurable diseases.

We cannot help being impressed with this tremendous achievement in the fields of the natural and physical sciences, but we soon realize that man has lagged far behind in his evolution in "the field of human relations." With all his scientific skills and knowledge, man has not found a way to break down prejudices toward minority groups. Unfortunately peoples of other cultures, religions and races are often excluded because they do not appear to be as we

are. We have made strides in reaching greater understanding and appreciation of these so-called minority groups, but we still have a long way to go. I believe that if lasting peace is to be established, human emotions and understandings must play a vital part.

Better understanding can be brought about by an increased exchange of students and teachers with other countries. Today many American students are attending colleges in European and Asiatic universities. For many years some of our American universities have had numbers of students from other lands on their campuses. If there could be more of this exchange, I am sure that we could go far toward improving our understanding of peoples of different

cultures. I believe that our criticisms will become less prejudiced as we learn more about the customs of peoples of other lands and as greater emphasis is placed on our similarities rather than upon our differences. It is important also that we be understood by peoples of other countries.

### Teachers' Colleges Have Crucial Task

In this rapidly changing world, where emotional stability is needed, the teachers college has a most important role. It must provide an education for prospective teachers so that they will be able to meet the challenge of the times with knowledge, with courage, with vision, with creativity and with the professional skill necessary to meet the



*Courtesy, National Coll. of Education*

*Through experimentation, children often can answer their own questions in science.*

needs of youth today. We believe that it is the function of teacher education to develop a dynamic sense of the worth of the individual and his capabilities for growth and self-direction and to afford opportunity for democratic ideals to be more fully appreciated by putting them into practice in school. The prospective teacher must understand child development and the experiences, materials and techniques which further growth. It is important that there be a clear recognition of the relation between maturation and learning. Individual differences and the factors causing these differences must be appreciated.

In meeting this great challenge, those within our teacher-training institutions who are responsible for curricular improvements must always be alert to meet the needs of the students. It is generally recognized today that a teacher must have a solid and well-rounded training in academic fields as well as in the technical phases of the profession. There must be a good background in the humanities and the natural as well as the social sciences. It is important for the teachers of children of all ages to have a background in philosophy and in English classics. It is true that much of what is learned will not be applied in later teaching of young children, but the disciplines and techniques acquired are necessary for a well-rounded education.

### **Teachers Should Welcome Change**

We must admit that our ways of living are changing, so we must recognize that we may need to change our ways of teaching. Faculties should not be afraid to admit that "methods" can

and should be changed. One certainly should not expect to teach a course the same today as one did twenty years ago and, in some cases, not even a year ago, when changes and improvements in other lines meet us every day. If teachers expect growth in students, it is necessary for them to grow also, and to be willing to accept new ideas and methods. Teachers who lack imagination often find it difficult to correlate their subjects with everyday problems. There is great need for research and for making use of the valuable materials in our professional libraries.

School systems want teachers who are able to meet the needs of a child not only for intellectual keenness and physical fitness but also for social adjustment, emotional stability and spiritual awareness. It is important to recognize the part played by emotions. How a person feels about a situation is often a greater factor in his actions than the knowledge he possesses. For years we have recognized that the "emotional climate" that pervades a classroom is perhaps the greatest factor in the learning situation, whether it be in the primary grades or at the college level. It is important for every student to feel that he has the sympathetic understanding of the instructor.

### **Better Human Relations Needed**

UNESCO is emphasizing the importance of training for better human relations and for spiritual values in a program that is aimed at developing individual integrity and well-rounded citizenship. Teachers of today should widen their interests to include the children of other countries. Daniel A. Prescott, one of the leaders in the study of

child development, points out three basic needs which are universal among children. They are, first, good health; second, love of home and a sense of belonging in the larger community; third, the belief in oneself which comes from success and accomplishment in at least one activity. Children all over the world should have these fundamental needs met with due consideration of differences in type, environment and experience.

In all programs for child training it is most important that we do not overlook the education of parents. If parents could be helped to understand their responsibility to the child, the school and the community, there would be fewer children with great problems in adjustment. It is important that expanded plans of parent education help parents understand the principles of child growth and development and meet the emotional needs of the child from birth to adolescence. Young peo-

ple today need guidance and counseling, and often a sympathetic understanding of a somewhat minor problem can mean the difference between success and failure.

Whatever may be the criticisms from time to time, modern education is forever striving to bring out the best within the individual. The same is true in our educational system as is true in our scientific discoveries and in all society—failure is a certainty, if control is lacking. Those of us who are teachers must hold professional standards high, and our teachers' colleges must train teachers to meet the physical, intellectual, social and emotional needs of children now, and must give vision and courage to those who undertake to lead youth. It is true that we have always been in a changing world, and it will continue to change. We hope that graduates of our teacher-training institutions will contribute toward making changes ever for the better.

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