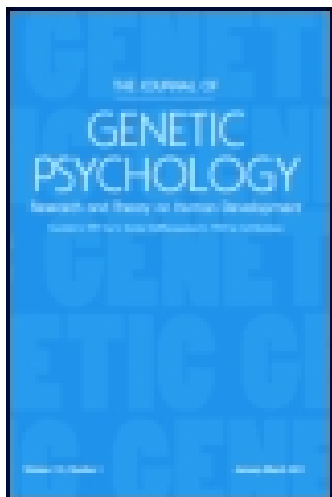


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## REFORM IN EDUCATION

By ROBERT BENNETT BEAN

Some reflections as to the present status of education in America, reflections that have come as a result of extended studies in the eruption of the permanent teeth, have prompted me to suggest a scheme for saving time in education without loss of essential values otherwise. There is a waste of at least two years in the present plan of American education. This is the conclusion reached by a committee of prominent educators in a report on "Economy of Time of Education" just issued by the United States Bureau of Education, and I believe a greater waste than this is present.

The conclusion follows an investigation lasting nearly 10 years by a Committee of the National Education Association,<sup>1</sup> of which President James H. Baker, of the University of Colorado, is chairman. The committee have endeavored to form a plan that would do away with the two year loss. They propose that 6 years be assigned to the elementary school instead of 8 as at present; that the high school period be from 12 to 18, divided into two parts, of four and two years each; that college work extend from 18 to 20, or 16 to 20, according to the method of distributing the last two secondary years; and that graduate or professional work at a university cover the years from 20 to 24. This would enable boys and girls to get ample vocational training after the age of 12; it would enable those who go on to college to get through their college work at 20; and it would save the professional man from having to wait until 27 to start his professional career.

The report insists that the present elementary course is too long; that the ground now covered in 8 years can be covered just as efficiently in 6, allowing secondary work to begin at the age of 12. To save on elementary schooling they urge: "Choose the most important subjects and the most important topics; make a distinction between first-rate facts and principles and tenth-rate. Confine the period of elementary education to mastering the tools of education. Include the last two years of the present elementary school in the period of secondary education and begin the study of foreign language, elementary algebra, constructive geometry, elementary science, and history two years earlier than at present."

Emphasis is laid on the necessity of concentrating on a few valuable studies: "The great mistake of our education is to suppose that quantity and strain constitute education. Education is a question of doing a few essential things well and without over-strain. The college has committed a grievous mistake in demanding ever more in quantity rather than in quality produced under conditions of healthy normal development."

The report takes up the problem of saving time in education from the point of view of the college, the school, and society at large,

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<sup>1</sup> *Economy of Time in Education*. Bulletin U. S. Bureau of Educ., 1913.

as well as of the individual pupil; and it contains opinions on every phase of the question from representative school men and the general public.

It has seemed to me that the professional man should start before the age of 24, because several years after graduation from a university should be devoted to experience in the profession before the actual work of life has begun, as is now being done in the medical profession by internes in hospitals. There is no more reason why inexperienced engineers, lawyers, or others should be foisted upon an innocent public than physicians. It is true that we should cut out the non-essentials in the primary schools, and lop off the excrescences, and there is much to be said in favor of repairing the foundation before the superstructure, but in a plastic system it may be well to begin in the middle and work both ways. A fitting capstone for a school system may become a suitable foundation for more advanced education. Compression may well be started with the university and the secondary schools, by allowing the first two years of the former to count also as the last two years of the latter and thus securing the Bachelor's and Doctor's degrees both in six years.

Education is the full rounding of the individual mentally, physically and morally, and should be approached from the biological standpoint as well as from any other. At the age of 16 years practically all the structures and functions have attained their competency, and at this time four vistas open before the youth on the threshold of life. The muscular, mental, sexual and alimentary activities are ready for ripening: exercise, study, the passions and the appetites are in full play. They may be grouped in two categories, motor and sensory. The muscular and mental activities are motor, the sexual and alimentary activities are sensory. The motor activities control the sensory, but if the sensory activities are ripened at the expense of the motor, the body may control the mind. It is essential that the motor activities become dominant, and that they may become so they must not only be exercised well, but as expressed by Henry James stresses and strains that reach the physiological limit of endurance will not only keep one occupied but will enable one to do more thereafter. The youth should be driven hard from 16 to 20 years of age because at that age the appetites and passions are strongest in youth, and this is the time when the mind and body are capable of responding to stresses and strains, therefore it is expedient at this time to give the mind the greatest amount of work it can endure, and to keep the body fit to nourish the brain, that by so doing the passions and appetites may be subordinated.

The crucial period of the 6 years course that I advocate for the completion of secondary and advanced education is the first two years, and this should come at about the age of 16 to 18 years. At the end of this time the student should have completed Mathematics through calculus; Latin, Greek and English; German, French and Spanish; Physics, Chemistry and Biology; and Civil Government. The courses should be complete, such as for instance in Chemistry through quantitative and qualitative analysis, organic and inorganic; and in Biology to include the dissection of a mammal, and the microscopic study of plant and animal tissues.

This should fit a person for anything whatsoever in life, and if advanced study is undertaken the next two years should be devoted to the fundamentals of the specialty selected, and the two years after that to the practical applications of the subject in the nature of original investigations.

The first two years work should entitle the participant to a cer-

tificate or degree of the fundamentals; the second two years to the Bachelor's degree; and the third two years to the Doctor's degree, which should be specific, as Doctor of Medicine, Doctor of Law, Doctor of English, Doctor of Engineering, Doctor of Agriculture, or what not. The first two years should be given in all the high schools, colleges, or other secondary schools, and well equipped teachers and laboratories should be provided for the courses of this period. All primary education should be raised to conform to this standard, and all advanced education would be raised following it. In this way the age of 18 would be the starting point for the young entering a business or other enterprise, the age of 20 would be the starting point for those who could not complete a professional education, and the age of 22 would be the starting point for the professions.

In consideration of the fact that at least four classes of students exist, a few exceptionally gifted, a few exceptionally poor, a large class of rapid workers and a large class of slow workers; or those who are unusually precocious, or unusually backward, and those who are only slightly precocious or slightly backward; in consideration of this, there should be at least four provisions made to meet the needs of all.

The selection of teachers is the most important task of the educator, and until the pay of teachers exceeds that of bricklayers, carpenters and plumbers, the best intellects will not be attracted to teaching except as a means of self-denial. The teachers in the primary schools should have the gifts of keen insight into human nature; the instincts of the born commander, and the power of imparting to others the essentials, whereas the teachers in advanced courses should have not only the powers of analysis and synthesis in productive thought, and the quality of exact observation with correct inference, but also the power of transmitting to others both inspiration and enthusiasm.