An Institutional History of the GED

by Lois M. Quinn, ©1990, 2002[1]

Introduction

In 2001 one high school in the United States graduated over half a million students. That "high school," the GED (General Educational Development) high school equivalency credential, was a test. One GED credential was issued for every four diplomas granted to students completing four years of public high school education, and teenagers made up nearly forty percent of the GED testing market. Since 1943 over fifteen million high school equivalency certificates have been issued to youth and adults based on the GED test.[2]

In the last half-century historians have examined the development of American education and particularly the American high school, but almost nothing has been written about the history of the GED test, its emergence as a major tool for providing high school credentials to teenagers, or the demise of the adult high school.[3] At the end of the 1940s when the GED was in its infancy, the U.S. Office of Education reported that half of all public school districts in communities of 2,500 or more had evening or adult schools.[4] Today few public schools or community colleges operate programs that offer adults the opportunity to take the Carnegie unit coursework they missed in school. For the vast majority of non-credentialed adults, and increasing numbers of teenagers, the GED has become America's largest high school, and its cheapest. Given current debates over appropriate educational programs to move high school dropouts, teenage mothers, welfare recipients and displaced workers into economic self-sufficiency, an understanding of the history of the GED credential is long overdue.

This history of the development and promotion of the GED credential does much to explain how a multiple choice test came to be the primary vehicle for educating non-credentialed Americans and why so few adult high school completion programs model the Carnegie unit high school. The chapter examines the origin of the "general education development" curriculum advocated by the American Council on Education and the evolution of the Iowa Tests of Educational Development, the first GED test. It explores the attack on the Carnegie-unit high school by progressive educators during World War II and introduction of the GED test to promote their "testing for credit" alternative to classroom instruction. The GED test gained national recognition in the 1940s first as a college placement tool for enrolling veterans who had not completed high school. The history traces the American Council on Educaton's efforts to promote use of the GED tests to measure "equivalency" to high school and the Council's successful efforts to block states from issuing "wartime" high school diplomas for veterans who left high school to enter the service. Once the GED "high school equivalency" credential was accepted, the test publishers worked to market the GED test for non-veteran civilians and later for teenagers. Finally, the history examines the importance of marketing and government support to the GED testing program today.

Origin of the "General Education" Curriculum and the GED Test

Key to establishing high school "equivalency" is a common definition of what constitutes "high school." The debate over appropriate curricula for secondary schooling – college preparatory, vocational, or "general education" – has a relatively short history beginning at the turn of twentieth century. Colleges interested in enrolling students with classical education backgrounds provided the first impetus for a common high school curriculum. In 1892 the National Educational Association created a "Committee of Ten," headed by Charles W. Eliot, President of Harvard University, which

broadened curricular options by endorsing four alternative tracks of college preparatory study all including four years of foreign languages (Latin, Greek, German, French, Spanish); four years of English literature and composition; three years each of mathematics (algebra, geometry, trigonometry), science (including physics and chemistry) and history; and a limited number of electives. The committee recommended that all students, college-bound or not, meet the same coursework expectations while in high school, arguing that the subjects chosen would make no difference as all students "would have had four years of strong and effective mental training."[5]

Adoption of Eliot's high school "unit" measurement (defined as a course offered five periods weekly for one academic year) was vigorously promoted by the Carnegie Foundation for the Advancement of Teaching, whose board of trustees was also headed by Eliot. This foundation used the clout of its pension fund to promote a single system of recording school credits by mandating that college teachers would be eligible for Carnegie pensions only if their institution's freshman admissions standards required fourteen high school "units."[6] Although the foundation soon embraced the use of college admissions tests as a more efficient technique for holding secondary schools accountable to college-determined standards, high school units continue to carry the Carnegie name. Meanwhile, rather than leading to a standardized curriculum, adoption of the "Carnegie unit" allowed local school districts to offer a wide range of high school courses, including vocational training, while imposing a uniform amount of "seat-time" necessary for high school graduation.[7]

The so-called "general education" curriculum was developed as a reaction against the college preparatory and vocational curricular tracks in the schools and can be explained in large part by its origins in the scientific movement of the 1910s. Out of that movement emerged a small core of progressive educators aligned with the American Council on Education and committed to

introducing a "general education" curriculum into the high schools and assessing school outcomes by "scientific" testing techniques. Two men held particular prominence – Ralph W. Tyler, a dominant force in the field of curriculum evaluation, and E. F. Lindquist, who became a foremost authority on multiple choice testing. The curriculum and testing approaches they advocated derived in large part from "activity analyses" work at the University of Chicago and Ohio State University.

At the University of Chicago Franklin Bobbitt, an education professor, urged curriculum planners to observe the functions of adults in order to find out what knowledge, attitudes and skills they needed for their work, rather than relying on the college preparatory traditions of the past to determine what subjects should be taught in school. Bobbitt argued that the "scientific management" principles used by Frederick W. Taylor to increase worker productivity in factories should also be applied to decisions about what to teach students in high school.[8] Bobbitt maintained,

> "Education is a shaping process as much as the manufacture of steel rails; the personality is to be shaped and fashioned into desirable forms. It is a shaping of more delicate matters, more immaterial things, certainly; yet a shaping process none the less."[9]

Using the model of the factory, Bobbitt described the child as the raw material, the ideal adult as the finished product, and the teacher as the worker. Bobbitt expected high school students to acquire "general education" which he defined as "that portion of the training, both foundational and functional, which is of general need, whatever be one's occupation or station in life."[10] Under this minimalist approach, only students pursuing specific occupational training would take subjects not ordinarily needed in daily life. Bobbitt explained,

> For example, activity-analyses will show that trigonometry is called for by the activities of the engineer; that it is not called for by the activities of typists,

> physicians, or milliners; nor by the general activities of persons outside of their occupations. As a consequence, trigonometry will be prescribed as occupational training in the courses for engineers, but not in courses for the other occupations named; nor for general education.[11]

Wesley W. Charters, Bobbitt's colleague at the University of Chicago, echoed Bobbitt's endorsement of the applied curriculum, contending that "activity analysis" of adult workers showed the limited value of liberal education for high school students. Charters posited,

> We should have had quite different curricula through the ages had the early teachers decided to use activity analysis as the basis and to teach the material most useful to the young in coping with the humble problems of their lives. Vocational education would not have been delayed until the present half-century. Hygiene would probably have been included to a greater extent, and other items closely related to the life of the common people would have been inserted.[12]

When Charters was recruited to direct the Bureau of Educational Research at Ohio State University, he hired Ralph Tyler, one of his former doctoral students, to head the Bureau's Division of Accomplishment Tests. This statistical beginning led Tyler into the field of educational evaluation and would help shape his thinking on appropriate methods for determining the high school curriculum.

Tyler's views on secondary education were likely also influenced by the short time that he himself had spent in high school. Tyler entered ninth grade at age twelve and was soon expelled for a school prank – adding skunk secretions to the paint used to coat the school radiators. To occupy the highly energetic and bright youth upon his reinstatement, Tyler's father arranged for him to attend high school in the morning and to work afternoons and evenings in a local creamery. Although employed nine hours a day seven days a week, Tyler managed to graduate from high school at age fifteen. Tyler then earned his undergraduate degree by age nineteen while working fifty-six hours a week as a telegraph operator.[13] He earned his doctorate under Charters at the University of Chicago.

While employed at Ohio State University Tyler moved into national prominence in 1934 as a spokesman on high school reform after he was made research director for the evaluation staff of the Eight Year Study, a project of the Progressive Education Association. The PEA secured agreements from several hundred colleges to suspend their "Carnegie unit" high school course prerequisites for graduates from thirty progressive schools – mainly exclusive private schools and public schools in wealthy suburbs – which would be given eight years to experiment with new curricular offerings and test measurements.[14]

The Eight Year project and related activities were supported with over a million dollars -- a staggering sum in the midst of the Great Depression -- in grants from the Rockefeller General Education Board, which was committed to applying business management principles to schools and moving high schools away from the traditional college-preparatory curriculum.[15] Midway through the Eight Year Study, University of Chicago President Robert Maynard Hutchins brought Tyler and most of his staff to the University of Chicago.[16] Tyler was named University Examiner and Chairman of the Education Department, and here he continued his efforts applying the "scientific management" approach to the field of education. A prolific writer and energetic, engaging personality, Tyler traveled thousands of miles each year meeting with teachers, school administrators and professional organizations to assist educators in developing mental tests to measure student progress toward educational goals.

It was the Eight Year Study's emphasis on quantitative measures that helped attract media attention and continued financial support from national foundations. A Time Magazine cover story in October 1938 reported that progressive pupils "came through with flying colors" on "the most searching [tests] of their kinds ever made." The article described examples of the "test results":

> From Lincoln School in Manhattan, perhaps the top-ranking Progressive school in the U.S., which is subsidized by Rockefeller money and had two Rockefeller boys as students, groups of pupils last year went to visit coal mines, steel mills, farms, TVA. This experiment was financed by the Alfred P. Sloan Foundation. Last week, after careful tests, Ohio State's Dr. Louis Rath, an evaluator for P.E.A. [the Progressive

> Education Association], reported that in a ten-day trip and six weeks of related classroom study, high-school juniors gained 15% in consistency of their thinking, became markedly more liberal, [and] matured two years in thinking power.[17]

While Tyler collaborated with classroom teachers on development of course objectives, he and his staff wrote their own tests to measure the students' outcomes, explaining that they distrusted the ability of classroom teachers to be objective in scoring essay tests. Even with short answer questions, according to Tyler's evaluation staff,

> The teachers found that it was difficult to differentiate among those acceptable uses of generalizations, facts and principles which were relevant to the problem, and the logical errors, obscured as they sometimes were by illegibility of handwriting and by awkward literary style. It was also difficult to decide when a student had cited enough evidence to support his choice of answer. A second criticism of this form of test was that it limited the number of principles which could be sampled because of the time required by the student to write out the answers.[18]

The new mental tests designed by Tyler and colleagues -- the experts – were expected to provide an objective assessment of student progress, and the handwriting and literary style problems were avoided since students were not required to write their own ideas on the new-style tests.

The Eight Year Study brought Tyler financial support from one of the dominant groups championing the "general education" curriculum and the new-style testing -- the American Council on Education (ACE). The council had been organized during World War I to involve the national associations of higher education in the war effort, and one of its first objectives was to prevent college-educated men from being used on the battle lines in order to avoid "destroying the reservoirs for the production of experts" and "the reckless waste of irreplaceable talent."[19] Toward that end, the Council developed tests to select, train and assign World War I military personnel. The American Council on Education continued after the war, with a membership of national education organizations, colleges and universities, state departments of education, city school systems and private schools.[20]

In the postwar period the Council experimented with psychological examinations for college freshmen (supported by a grant from the Commonwealth Fund) and sponsored a Cooperative College Study in General Education (financed with Rockefeller and Carnegie money) to encourage colleges to develop new-style mental tests for appraising student outcomes in general education studies.[21] In addition to its foundation support, by 1939 the American Council on Education was selling over two million copies of its new-style measurement tests a year.[22] The Council used these resources and its national position to advocate for educational policies, explaining in a 1939 funding proposal to the General Education Board: "The peculiar genius of the Council, because of its prestige and its diversified representative membership, is its ability to draw into conference groups persons of such varied educational interests and known competence that the conclusions of their deliberations have the weight of authority."[23]

In 1940 to help stimulate fundamental changes in high school curricula the Council published a report on What the High Schools Ought to Teach, authored by a special committee of the American Youth Commission, which included Tyler. Reflecting its view that schools should prepare youth for the daily activities they would encounter in adult life, the committee argued that high schools should offer more practical instruction in subjects like personal problems, physical and mental health, family life and social studies, along with paid and unpaid work experience programs. The committee attacked English composition, algebra, science, history and foreign language as "the vicious aspects of the ninth grade." "It would be difficult," the writers inveighed "to design a more uninviting year's study for adolescents."[24] The committee's report recommended placing curricular emphasis on "general education" rather than on vocational courses or on college-preparatory instruction in English, math and science, arguing that a large portion of American workers held jobs requiring little skill or training.

One of the Tyler's fellow test writers for the Cooperative College Study, E. F. Lindquist, was the author of the "general educational development" (GED) test. Linquist's interest in high

school curricular reform had also developed through his contacts with the American Council on Education. Like Tyler, Lindquist was a product of the rural Midwest and had early employment as a high school physics teacher. Lindquist entered a doctoral program at Chicago in mathematical physics but left to take a high school teaching job after running out of money.[25] Impressed by lectures on educational testing conducted by Ben Wood of Columbia University, Lindquist decided to pursue an advanced degree in educational measurement at the University of Iowa. Upon graduation, he was retained at Iowa as an assistant professor. Wood noticed Lindquist's work on the Iowa testing program and brought him onto the Cooperative Test Service project, which Wood was directing for the American Council on Education.[26] Through the Cooperative Test Service Lindquist began working with Tyler and others experimenting with new objective tests that could advance different teaching methods and the general education course emphasis, and Lindquist sought to use this knowledge to improve high school coursework and testing in Iowa.

The Basis for the GED Test Battery: Testing What Iowa High Schools "Ought" to Teach

It was the issue of speed that had helped Lindquist develop special expertise in the new-style multiple choice test approach used for the Iowa testing program and adopted for the GED test -- speed and the popularity of a statewide academic contest. The basis for Lindquist's expertise in standardized test development began in 1929 when the University of Iowa's College of Education and Extension Division initiated a contest, the "Iowa Academic Meet," to provide an incentive for academic achievement in high school. In announcing the testing competition, Thomas Kirby, a University of Iowa education professor observed,

> Accounts of dinners given to reward heroes of the gridiron, the track, the basketball floor, constitute a large feature in our high school papers, together with extended accounts of such games portraying in graphic detail the fine teaching or coaching because of which the contestants vied so fiercely. However, we look over these high school papers in vain for accounts of dinners in honor of pupils of outstanding

> achievements in English, mathematics, science or other activities that are presumed to furnish the basic activities by which high school pupils are educated.[27]

The Iowa “Brain Derby” tests focused on Carnegie unit subjects taught in the Iowa high schools -- relying on state "courses of study," commonly used textbooks, and classroom materials. Under Lindquist’s direction, the University of Iowa prepared tests in twelve high school subjects: first year algebra, plane geometry, English mechanics for grades nine and ten, English and American literature for grades eleven and twelve, general science for grade nine, physics, American history, world history, fourth semester typewriting, and stenography. The tests were forty-five minutes in length in order to fit into the normal class period.[28] To guide teachers in preparing for the contest, Lindquist and his staff published "subject matter circulars."[29] For example, the circular for literature advised,

> The list of writers on whom questions will be asked in the sections devoted to literary history will be virtually the same this year as last. The American authors include: Irving, Cooper, Bryant, Poe, Longfellow, Clemens, Harte, and Howells. One name has been omitted from last year's list for the reason that it has seemed wise not to include the name of any writer now living.[30]

The academic contests were an immediate success. Two hundred forty-three schools entered the first contest in 1929; 361 schools entered the second. Within three years over half of the high school students in Iowa were participating.[31] Local school winners competed at district contests and a thousand students progressed on to a state contest in Iowa City, the "Brain Derby," as it was dubbed, where the top two winners in each subject were announced at an awards banquet.[32]

The Iowa tests included a variety of matching, fill-in-the-blank, true-false and multiple choice questions. The English mechanics test required students to mark grammar corrections directly in their test booklet; some algebra and geometry items were computational and required open-ended responses. The typewriting test was based on actual typing demonstrations and the stenography exam included dictation exercises, but these two vocational tests were soon dropped.

Given the popularity of the contest and number of participants, the speed of scoring became increasingly important to the question design. Consequently, during the early years of the competition Lindquist converted many of the questions to multiple choice items that could be marked on separate answer sheets and graded quickly by volunteer staff. Julia Peterson, one of Lindquist's colleagues, described the advantages of the testing format to the Iowa event in her 1953 history, **The Iowa Testing Program: The First Fifty Years**.

> Local school staffs administered and scored the first set of tests, computed local averages, and reported their results to Iowa City in nine days. Administration and scoring of the district tests were also done locally under supervision by the superintendent of the host school and assistants from nearby schools, duly approved by the central office. With up to 24 pupils qualifying from each school, 2,000 "whiz kids" might assemble in a single district -- quite an invasion for the smaller towns to handle. The tests had to be scored the same day -- or night -- so that results could be announced promptly to anxious contestants. In the final contest in Iowa City, test scoring was done by the chairman's colleagues and staff; again, scoring was virtually curbside, to permit announcement of all winners at the banquet on the second evening.[33]

The university provided staff time for the development of the tests and supervision of their use, with schools paying for the test booklets and administration at the local level. This modest beginning provided the University of Iowa with test scores from thousands of students in the state and the basis for what would become a national testing industry. After Lindquist took over as program director in 1931, he discontinued the district contests, renamed the event the State Scholarship Contest, and relabeled the test battery the "Iowa Every-Pupil Achievement Tests."[34] Lindquist required school districts entering the competition to test their entire student body so that he could develop statewide norms for each course area, conduct "post mortem" test item analysis and experiment with improvements in test questions and format. In 1935 Lindquist began reporting school rankings to each school in confidential summary reports.[35]

Lindquist and his staff constantly strove to improve the scoring of the tests at the lowest possible price, over the years inventing everything from a device for normalizing the moisture

content of answer sheet paper to a design for a high speed electronic scoring and recording machine. After developing the separate answer sheet, Lindquist introduced a procedure to discourage students from guessing by randomly selecting answers.[36] Lindquist also strove to improve the type of test questions used, work that was spurred by his association with Ralph Tyler and others connected with the American Council on Education. While collaborating with Tyler on test development for the ACE's Cooperative Test Service, Lindquist came to view the Iowa contest tests as extremely limited in their approach to knowledge, placing too much emphasis on memorization and the competitive nature of the "Brain Derby." He resolved to revise the Iowa testing program to experiment with test items used by his colleagues at the Cooperative Test Service and to advance those educational objectives that he viewed as most important. In 1938 Lindquist sought funding from the dean of the College of Education to develop a new high school testing program "that would very significantly improve the quality of educational guidance in Iowa schools, [and] that would counteract the `subject matter consciousness' which now permeates high school teaching."[37] Echoing the themes of the Eight Year Study, Lindquist argued to his dean that the present type of ninth and tenth grade instruction in mathematics "is futile, if not worse."[38] Lindquist also tried to eliminate the academic contest, but University of Iowa administrators refused to drop the event given its great popularity throughout the state and its usefulness in recruiting academically talented high school graduates to the state university.[39]

In an October 1941 address to the Conference on Administration and Supervision in Iowa City, Lindquist openly voiced his concern about the limitations of the "Iowa Every-Pupil Tests" and other course-oriented examinations: "The selection of content of the tests used has been based on an analysis of the things now being taught in the school subjects, not on our or anyone else's notion of what ought to be taught in these subjects."[40] [emphasis in original] What were needed, argued Lindquist, were tests of "general educational development" that would force teachers to focus on skills not emphasized in current classes.[41]

America's entry into World War II finally provided the climate in which Lindquist could permanently discontinue the spring contest testing program. In January 1943 Lindquist sent a letter to the Iowa superintendents and principals stating,

> I regret to inform you that we will be unable this spring to conduct the Iowa Every-Pupil High School Testing Program, which has been held annually in May. Many of our regular test authors are now in the armed forces or in other war service, our statistical and clerical staffs are similarly decreased, and most of my own time is being devoted to Army testing work.[42]

Lindquist advanced a new test battery, the "Iowa Tests of Educational Development" (ITED), as a permanent alternative. "We had spent five years developing the materials and planning procedures for a new high school program," Lindquist later explained, "and thus were all set to go when the time seemed opportune."[43]

While the new ITED battery was not used for a statewide contest, it was still designed to rank each Iowa student and to compare school district performances. All ITED examinees received pupil profile cards which showed their percentile ranking for each test subject, and schools received confidential reports on the average scores achieved by their students in each grade along with norms for determining the school's percentile ranking.[44] From his experience selecting test items that could be used to rank students and schools, Lindquist had developed a set of rules for constructing these norm-referenced tests. Questions could not focus on what everyone was expected to learn in high school since these questions would not discriminate among students. Likewise, questions were eliminated which the "top" students did not consistently answer correctly or which "bottom" students understood. In Lindquist's view, the technical considerations involved in ranking students moved the "scientific" test-making process out of the purview of classroom teachers. He explained, “The problem of selecting test items cannot be left to the subject matter expert or to the subjective judgment of anyone, but is mainly a technical problem and must be based upon objective facts

secured from actual trials of large numbers of items with pupils of the kind to which the completed test is to be administered."[45]

Like Tyler, Lindquist believed that his tests were superior to teacher assessments in the classroom. In a promotional letter to Iowa principals and superintendents, he asserted,

> The Iowa Tests of Educational Development are designed to provide each teacher and counselor with a comprehensive and wholly objective and unbiased description of each pupil's educational development. (This is not provided by the usual school records of course grades and scores on subject examinations, concerned as they are each year with immediate and often temporary outcomes of instruction in only the particular subjects the pupils happens to be taking at the time.) [emphasis in original][46]

According to Lindquist, the ITED would allow Iowa teachers to see beyond their own biases. He promised that once given student test scores the teacher would be "practically certain to modify his previous judgments of some of his pupils, and to correct many wrong impressions of the pupil's ability that are due to irrelevant and misleading factors such as the pupil's appearance and personality, his economic or social status, his past school marks and reputation, etc."[47]

The ITED required about seven and a half hours to complete and had nine tests in the battery: (1) understanding of basic social concepts, (2) background in the natural sciences, (3) correctness in writing, (4) ability to do quantitative thinking, (5) ability to interpret reading materials in the social studies, (6) ability to interpret reading materials in the natural sciences, (7) ability to interpret literary materials, (8) general vocabulary, and (9) use of sources of information. With ITED test questions no longer tied to specific high school coursework, Lindquist administered the same test battery to students in all four grade levels at the beginning, rather than the end, of the school year.[48] In agreement with the progressives' emphasis on teaching practical reading in high school and Lindquist's interest in testing general knowledge through reading, the ITED reading tests equated high school performance with the ability to relate to reading passages in the social sciences, natural sciences, and literature. The reading tests, which Lindquist considered to be the heart of his

ITED battery, provided passages for students to read and interpret through a series of multiple choice items and were considered avant-garde since that approach had not been used previously in published standardized tests.[49] Lindquist justified the use of these tests, explaining, "There are many different kinds of situations in which a person has occasion to use his education, but that which lends itself most readily to testing is the reading situation--that in which he interprets, evaluates critically, and employs in his own thinking, information and ideas which are presented to him in print." [emphasis added][50]

In addition, there was a test on "Correctness and Effectiveness of Expression" and a test on "General Mathematical Ability." The math test reflected Lindquist's belief that high school subjects should provide practical instruction in arithmetic -- the only math skills he thought were needed by the majority of students. Accordingly, the ITED emphasized questions on arithmetic rather than high school algebra, plane geometry, solid geometry or trigonometry. Lindquist described the contents of the Iowa math test as measuring "the ability to deal with numbers, and [which] include problems on such things as estimating expenses on home repairs, handling simple business transactions, figuring out costs on your own insurance, taxes, investments, installment purchases, and so on."[51] Consistent with the American Youth Commission's tract on What the High Schools Ought to Teach, composition and foreign languages were not included in the test battery, and any concerns about measuring vocational education or outcomes from elective courses were by-passed by emphasizing the "general education" nature of the tests

The War on the Carnegie Unit: Promoting "General Education" and "Testing for Credit"

Tyler, Lindquist and other reformist educators seized upon America's entry into World War II as an opportune time to promote their "general education" curriculum, new-style multiple choice tests, and "testing for credit" alternative to the Carnegie unit system. Within two weeks after the bombing of Pearl Harbor, the College Entrance Examination Board announced suspension of its

College Board essay examinations in favor of the Scholastic Aptitude Test (SAT), which it had been trying to promote since 1926.[52] Seven months into World War II, University of Chicago President Hutchins announced that his university would begin awarding a bachelor of arts college degree in general education to students completing their first two years of college. Believing that the real work of the University consisted of specialized training at the graduate school level, for several years faculty administrators at Chicago had sought to move students through their general education program as quickly as possible using standardized tests to determine when the students had learned enough.[53] Issuing a degree after two years of college had several advantages for the University of Chicago: it identified a point at which less talented students and those who had run out of funds could leave college, and without disgrace since they would be awarded a credential for their work. It further enabled students ready for professional studies to enter graduate school after two rather than four years of college.[54] In spite of intense criticism from other colleges and universities, Hutchins chose to call his credential a "bachelor's degree" because of the credential's prestige. In an article in the Educational Record defending his position, Hutchins rationalized,

> The degree is universally recognized as something everybody ought to have if he can scrape up the time and money to get it. It is time-honored in the sense that people have wanted it for a long time. It is not universally recognized as meaning anything except graduation from some kind of college.[55]

The credential, Hutchins argued, had served to "thwart the national reorganization of American education."[56] Rather than eliminating the bachelor's degree, Hutchins proposed "to give it meaning and function and to use the recognition and honor in which it is held for good educational ends."[57]

Reaction to Hutchins' announcement was almost universally negative. One educator criticized the so-called reform as short-changing students and denounced Hutchins' excuse of the war to promote his changes. The plan was prepared, he charged, "as a coldly calculated, cleverly timed, permanent change." He elaborated,

> In addressing the North Central Association, Mr. Hutchins spoke with touching pathos of the students who are going to be called into military service before completing their college course. He said, "It is our duty to reorganize the educational system so as to fit them for freedom before they are called to the colors." Is this to be done by longer hours and fewer holidays? No, by no means. It is to be done by fiat from the University of Chicago. Mr. Hutchins says in effect, "Let them have bachelor's degrees. This will make them fit for freedom."[58]

Another educator disagreed with Hutchins' claim that the contemporary bachelor's degree lacked a clear definition. College, he maintained, "required fifteen good Carnegie units to enter, and it took four years and 120 semester hours of good solid content to get out with its degree."[59] He urged other schools to ignore the University of Chicago's action, observing that any school willing to drop intercollegiate football, as Hutchins had recently done, had nothing left to fear from public criticism.[60]

Hutchins and Linquist were not the only educators who saw the war as an opportune time to push for long-desired reforms. In a February 1942 address to the National Association of Secondary-School Principals, Will French, a Professor of Education at Teachers College of Columbia University, attacked the Carnegie unit system for high school. French, director of two progressive schools in the Eight Year Study, asserted that a top priority of high school principals during the war should be to "break the secondary schools of America loose from the ball and chain of the Carnegie unit of credit" and to develop "measures of maturity" by which to evaluate student and school performance. French provided a litany of school reforms that were being stymied by the Carnegie unit credit system, concluding:

> It is a bottleneck which if broken will do more to permit and promote improvement in secondary education than any other single thing that could happen in secondary schools, for talk as you will of the <u>do</u> curriculum, of new purpose and functions for secondary education, of pupil guidance, of improved promotional practices, of new plans for college entrance, and of recognition of the school's responsibility for post-school placement of youth on jobs, as long as the basic school record is one of credits earned in subjects, nothing really great and fundamental is going to happen in American youth education.[61]

A number of high schools argued against teenagers leaving school early; some even focused on relating academic work to specific wartime needs, e.g. introducing topics in physics courses on "aeronautics, guns and projectiles, detection of submarines and airplanes" and in chemistry on "the study of explosives, bombs, flares, war materials, fire extinguishing gasoline and other fuels."[62] Several progressive school principals argued, however, that war conditions virtually demanded a general education program with its emphasis on democratic values, physical education, work experience, reading and general math skills.[63] Meanwhile, the American Council on Education used foundation funds to support work by Tyler and his staff to develop a one-year general education program to present as a response to the reduction in the military draft age. The staff was also funded to develop courses in general education to add to the correspondence course offerings, which had been requested by the Armed Forces.[64]

Immediately after the United State's entry into the war, the American Council on Education began promoting its general education curriculum and testing-for-credit agenda within the military through the Joint Army and Navy Committee on Welfare and Recreation – a committee established to deal with soldier morale issues including supervision of off-duty entertainment, motion picture schedules, prostitution and venereal disease control, and Red Cross services. The joint committee's Subcommittee on Education was charged with arranging discussion groups, library services, correspondence course programs, visual education, and pamphlet materials on current problems for use by military personnel in their leisure hours.[65] When the War Department established a school in Madison, Wisconsin to handle correspondence courses (the Army Institute, later renamed the U.S. Armed Forces Institute, USAFI), the American Council on Education, which provided staff for the Subcommittee on Education, made the Institute a focal point for their educational reform efforts.[66]

A committee established by the American Council on Education, including Wilford M. Aikin who had initiated the Eight Year Study for progressive high schools, Will French of Columbia University who had published the manifesto against the "ball and chain of the Carnegie

unit," Ralph Tyler, and four others, recommended to the Subcommittee on Education that the Army Institute pay for construction of multiple choice tests for all of the correspondence courses available to service personnel. According to the American Council on Education, these tests would ensure that colleges and high schools "determine proper placement of the individual [veterans] without wasteful repetition of materials they have learned through Army experience."[67] In May 1942, the University of Chicago secured a contract to establish a special examination staff headed by Ralph Tyler to develop new correspondence course tests and subject matter exams to measure proficiency in specific fields of study. Tyler's staff authored seven hundred end-of-the-course tests, discarding the correspondence schools' existing essay examinations, in order to provide new multiple choice tests promising "greater comparability and less danger of error."[68]

Tyler and his colleagues, including E.G. Williamson of the University of Minnesota, W.W. Charters, Tyler's former mentor, and E. F. Lindquist, the testing expert from the University of Iowa, gained a larger oversight role in military education as an Advisory Committee to the Army Institute, appointed by the Subcommittee on Education.[69] This civilian group secured authority to review teaching materials for all correspondence courses, to broker with colleges and universities for recognition of college credits for military courses, and to "appraise the comprehensive examinations developed to measure the competence of the soldier."[70]

Even as they executed wartime duties, the progressive testing advocates continued pressing for civilian educational reforms and more emphasis on "general education" and less on “immediate military needs.”[71] As Charters later reflected,

> At the outset in 1942, the military authorities were quite firm in their position that only courses which had a direct and specific bearing upon the military efficiency of the students should be offered by USAFI. At that time and persistently thereafter, the civilians kept education for peacetime in the van of discussion and pressed for a widening range of offerings.[72]

These civilians advocated an end to Carnegie unit "seat-time" credit and promoted use of tests alone to measure the educational advancement of soldiers. Charters explained the advocates' rationale,

> The unknown land that lay between the military and the schools was academic credit to returned veterans for their war experiences. After these men and women had spent months in a tense and gripping environment, had come in contact with many different cultures scattered over the globe, and lived under the radically different conditions of Army and Navy life, it was logical to assume that they had grown in general maturity, in the mastery of many techniques, in information and attitudes and that these could be translated into academic credits.[73]

The single-mindedness with which Tyler and his colleagues pursued the furtherance of multiple choice testing to the exclusion of other measures of achievement is evident in several clashes reported at Advisory Committee meetings. Some Advisory Committee members objected strenuously in June 1942 when they learned of proposals by the Navy Department to give credits for specialists' courses and for "character and leadership shown by ratings and promotions."[74] Committee members charged that such proposals violated ACE's earlier recommendations that only norm-referenced tests be used for credit determination and the Subcommittee on Education's policy that credit recommendations be made only by civilian educators.

The testing advocates on the Advisory Committee even objected to the issuance of certificates upon completion of military courses. Williamson warned that the certificates might later be presented to colleges for credit. When a military officer proposed issuing certificates that would report competence demonstrated for major course objectives, Lindquist protested that the military could do that only if evaluators had developed norms for each examination. Several committee members suggested that each soldier receive a paper saying that he was "ready" to take an examination in the course, but a military representative responded that this would be insulting to the service personnel.[75]

The Advisory Committee also dismissed a proposal to develop tests or encourage colleges to recognize the language skills service personnel were acquiring in Turkish, Dutch, Moroccan,

Arabic, Japanese, Russian and other foreign languages not typically offered in American colleges, dismissing this training as "scarcely of the quality that merits consideration for credit."[76] The primacy of the Advisory Committee's interest in "general education" test development was seen in an argument at the December 1942 meeting. Even with Russia under siege and most of the European continent under Axis control, Lindquist expressed regret that it was necessary for the testing staff to devote its major attention to technical courses. He was anxious to develop general education programs. A school superintendent from Michigan reacted that he "thought the primary job of the committee was to promote the work of the Army Institute in winning the war and not to promote any particular type of education."[77] At the February 1943 meeting, the principal of the Milwaukee Vocational School questioned whether the Advisory Committee members' own colleges would accept the general education curriculum they were promoting for the military and was told that "acceptance of the accreditation principle based on tests was a powerful first step."[78]

Introducing a Test of Military "General Educational Development"

Along with promoting multiple choice tests for correspondence courses, Tyler, Lindquist and their colleagues developed a broader proposal to establish college credit for military experience. Going well beyond the Subcommittee on Education's role of encouraging off-duty education, this group recommended that for-credit tests be made available to all service personnel even those who had not enrolled in military courses, taken correspondence courses or used self-instructional materials. The Advisory Committee urged the U.S. Armed Forces Institute to finance new testing work to appraise the level of "general competence" reached by personnel through any type of experience while in the Armed Forces. The Advisory Committee designated a further subgroup (Tyler, Lindquist and Williamson) who proposed using "a battery of tests of general educational competence; to enable the school or college to effect an appropriate educational placement of the

applicant in terms of his indicated educational maturity and the extent to which he has met the general educational requirements of the school or college."[79]

The subgroup considered a number of possible testing instruments for this new measure of "general educational development." Meeting minutes reported that "there might be some search made for a body of common experiences which would be typical for the men who will have undergone the Army `culture,'"[80] but this approach was never pursued. Instead, the committee moved quickly to identify an existing "general educational development" test battery, which could meet the evaluation experts' requirement that testing instruments be normed on a representative sample of the population, an extremely time-consuming undertaking during wartime. The testing staff identified several criteria to be considered in selecting among existing test instruments: immediate availability, ease of administration, availability of existing norms, usefulness for counseling, minimum overlapping of tests, and the extent to which the tests recognized skills and knowledge resulting from "maturity" rather than mastery of traditional high school content. Two intelligence tests were considered: the Army's General Classification Test and the American Council on Education Psychological Examination. The group considered Tyler's tests, both the comprehensive examinations used by the University of Chicago and tests prepared for the Eight Year Study. The University of Chicago tests were deemed too "indigenous" to that school except for their use as subject matter tests. The Eight Year Study tests on logical reasoning, interpretation of data, and social sensitivity were recommended for use in granting college credit rather than for admission purposes. (The group suggested that some colleges might grant a year's work, thirty-two semester hours of credit, based on measures of "social maturity.") Tyler, Lindquist and Williamson agreed that the best tests of reading, general information and English were the Iowa Tests of Educational Development (ITED).

The Iowa tests had features that were of critical importance to the subgroup. They reflected the progressive educators' agenda for practical coursework that downplayed the classical high

school curriculum, measuring what the progressives believed high school ought to teach rather than current course offerings. The multiple choice test battery appeared "objective," thus avoiding subject matter debates that would inevitably arise from essay exams, the commonly used tests of the day. The tests had the added advantage that staff with little or no education in test taking (or knowledge of high school subjects) could grade them. And finally, they had already been normed on thousands of high school students in Iowa.[81]

About a fourth of Iowa's high schools participated in the first ITED in the fall of 1942.[82] Armed with this norming base, Lindquist proposed that USAFI use the Iowa test battery for the initial GED test in order to implement a "general educational development" testing program as quickly as possible.[83] While totally unrelated to military life or to the war experience, the Iowa tests would allow the testing experts to rank veterans on the same scales used to rank 48,000 high school students in Iowa.

Given Lindquist's earlier consultation for the Cooperative Test Service, it is not surprising that Ralph Tyler supported Lindquist's offer to use the Iowa test battery as the basis for the proposed military "general educational development" exams. At its October 1942 meeting the three-man USAFI Advisory Committee subgroup gave its approval for use of five of the Iowa tests for placement and guidance purposes. E.G. Williamson, the third member of the subgroup, also supported the use of the Iowa tests to indicate equivalence to high school graduation but doubted the need for tests to place students in the three years below the twelfth grade level. It was his position that veterans who had not completed high school should be admitted directly to college where they might take secondary school courses, if necessary, along with their college work. Williamson, in particular, wanted the Iowa tests shortened so that time would be available to counsel each veteran. Lindquist also supported shorter tests both to simplify the scoring and to encourage more service personnel to take the exams. The committee concluded that the three Iowa reading tests, the general

mathematics test and the corrections in writing test, altogether requiring 265 minutes, would constitute a suitable time frame for their proposed "general educational development" test battery.[84] Lindquist opposed the addition of essay exams as part of the test battery, regardless of whether the themes were evaluated by military personnel or forwarded to the colleges for review. He urged the committee to allow the high school GED test battery to remain as nearly correlated as possible with the current ITED so that his staff could concentrate on writing questions for a college edition GED test battery.[85]

The other committee members recommended using the Iowa Tests of Educational Development on a temporary basis and expressed concern that colleges would be dissatisfied if the battery was continued indefinitely. They recommended that the mathematics test be "stepped up in difficulty and include a bit more of formal high school mathematics," the literature section include more references to significant "classics," the social science reading test include more environmental concepts, and the natural sciences reading test provide more evaluation of data supporting conclusions.[86] These changes were not made, even though Lindquist worked with Tyler's USAFI examination staff at the University of Chicago for two years constructing additional forms of the high school and college-level GED tests.[87]

At first, the ITED/GED test battery was presented solely as a tool for placing returning veterans in school and for determining how these men compared to the student population traditionally enrolled at each institution, and not as a high school credentialing device. Thus, Lindquist and Tyler offered the fruits of the Iowa "Brain Derby" to save veterans from wasting time in high school and to allow those with sufficient "general educational development" to advance directly to college.

"Testing for Credit"

The American Council on Education proposed three methods for determining school credits and making placements in school programs. First, the American Council on Education recommended granting smaller amounts of "blanket credit" -- up to one semester of high school credit or one-half semester of college credit -- for military training, physical education, hygiene or school electives. Secondly, the Council proposed that schools review each veteran's Armed Forces test scores in special fields and subjects to determine credits for individual courses. Finally, ACE recommended using the GED test results along with the veteran's military history and other examinations to determine an appropriate placement in school.

In 1942 Tyler recommended that the "testing-for-credit" program be introduced first for injured soldiers who were being discharged or transferred into veteran rehabilitation programs. The advantages of using early war casualties were laid out in minutes of a meeting between Tyler's staff and Army Institute Project personnel.

> 1. The way will be led by certain prestige institutions. 2. It will be considered a patriotic duty to help in the situation. 3. With high school and college enrollments depleted as they are, and with the great possibility that the government will subsidize the education of these men, institutions will be happy to cooperate for economic reasons.[88]

At this stage the GED test was not offered as a credentialing instrument but rather as one of several tools for guiding school administrators in student placement. In its 1943 tract on Sound Educational Credit for Military Experience, the American Council on Education assured colleges and high schools that,

> . . . the sole interest of the American Council on Education in suggesting this plan is to provide factual information to be utilized by the individual institutions in the light of their own policies with regard to placement and credit -- not to dictate to schools or colleges in these matters. . . . At the time the individual is discharged from the armed forces, the Army Institute will make available to the educational institutions a "competence profile" of the returning service man (or woman), including his full

> military and previous educational record and also his Army Classification score and his scores in a battery of tests of general educational competence....[emphasis in original][89]

The American Council on Education assembled representatives of the regional accrediting associations to seek support for the "testing for credit" program. Subsequently, five regional college accrediting associations endorsed the concept of using the GED tests for college admissions and credit.[90] In mid-1943 the American Council on Education was able to report that over four hundred colleges and universities had officially endorsed the ACE recommendations for the GED and end-of-the-course test credits.[91] With support from the military, ACE prepared and distributed fifty thousand copies of its Sound Educational Credit booklet and hired Thomas Barrows, former president of Lawrence College, and Cornelius Turner, a former school superintendent and chief of USAFI's accreditation section, to stump the country arguing for acceptance of the USAFI testing programs. For its part, the U.S. Armed Forces Institute established a Central Clearing Agency of Accreditation, which provided transcripts to soldiers summarizing the extent of their military training. The USAFI guidelines emphasized the military's "hands off" position toward the determination of which military activities were deserving of college or high school credits.

> The Agency was not to act as an accrediting agency: it did not have the authority to grant school credit to service personnel, nor was it to assume any responsibility in recommending to civilian educational institutions the amount or kind of credit which might be granted for military training, military experience, or educational achievement demonstrated by service personnel through completion of USAFI courses or tests.[92]

The American Council on Education consistently supported this limited role for the military, while furthering its own influence over the educational agenda by developing courses, advocating "general education" programs in both military and civilian schools, and promoting the use of its own standardized tests over teachers' assessments of students. The success of the American Council on Education was due in no small part to the considerable resources it received from foundations

eager to champion the expanded use of multiple choice testing. In 1945 the ACE secured a $75,000 grant from the Carnegie Corporation to promote its testing for credit program and the Council was still in good financial condition from a $300,000 operating grant the Rockefeller General Education Board had provided in 1941.[93] The ACE used these monies to establish a Commission on Accreditation of Service Experiences and a Veterans Testing Service, run by Tyler out of the University of Chicago. In addition, the American Council on Education secured the copyrights for the GED, subject matter, and end-of-the-course tests prepared for USAFI by the Examination Staff at the University of Chicago. The Council arranged to sell test booklets at cost to the military and at competitive prices to educational institutions and signed a contract with the University of Chicago to serve as the publishing agent for the tests.[94]

The accrediting associations and several other national agencies provided financial support for development of an ACE Guide to the Evaluation of Educational Experiences in the Armed Services prepared by George Tuttle of the University of Illinois, a nine hundred page document listing hundreds of courses provided in the military along with credit recommendations.[95] At ACE's urging, the Veterans Administration purchased twenty-five thousand copies of Tuttle's guide for free distribution to high schools and colleges.[96] This document was billed as an invaluable tool for institutions that were confronted with veterans holding a myriad of training and course completions, many of a highly specialized and technical nature. High schools and colleges could use the guide for descriptions of veterans' courses or could seek further assistance from the United States Armed Forces Institute, which carried on voluminous correspondence with educational institutions answering their specific concerns and clarifying the content of coursework.

The American Council on Education also prepared a civilian version of the GED test battery that they encouraged schools to use to develop local campus norms for admitting veterans who had not completed high school or who had poor high school records.[97] In addition to GED testing of Army, Navy and Marine personnel, Tyler reported in January 1946 that the ACE Veterans Testing

Service had contracted with fifty-eight civilian institutions, including high schools and colleges, to handle GED testing for discharged personnel.[98]

ACE President George Zook spoke of the importance of the ACE military GED initiatives to the Council's larger reformist goals.

> While the work of this Commission is addressed to the matter of escalating experiences in the armed services in terms of school and college credit, it is easy to see that any measures which schools or institutions of higher education apply to veterans will commend themselves immediately to the same institutions as policies which they may also follow with respect to nonveterans. Already the action taken by schools and colleges, largely stimulated by this commission, has extended into all parts of the country and into all types of institutions.[99]

Zook recognized the implicit attack on the Carnegie unit in his report on the work of the ACE Commission on Accreditation of Service Experiences. "It seems fair to conclude, therefore, that time-serving as necessary to school and college credit is due for considerable modification and that what a student knows or can do will become more and more recognized as the basis for graduation."[100]

Using the GED Test to Enroll Veterans in College

The task of selling the GED testing concept was greatly facilitated by the enthusiastic reception war veterans received upon their return to the states and by the GI Bill of Rights, which supported their enrollment in colleges and universities. Even before the United States entered World War II, President Franklin Roosevelt initiated plans for demobilization of troops in order to avoid the economic catastrophe that had followed World War I. Roosevelt endorsed proposals to finance veterans' education in order to help prevent an economic depression when America's massive military force returned home and to dampen public opposition to the drafting of teenagers. The Servicemen's Readjustment Act, nicknamed the "GI Bill of Rights" by an American Legion ex-newspaperman, was unanimously passed by Congress in summer of 1944. In all, over two million

veterans attended college under the World War II GI Bill at a cost to the federal government of 5.5 billion dollars.[101]

Given postwar patriotic sentiments, the maturity of veteran applicants and the GI tuition they brought with them, it is not surprising that campuses sought whenever possible to accept veterans who had dropped out of high school to fight in the war but who possessed sufficient academic skills to handle college level work. Procedures varied widely as to how high school non-completers were admitted. Of sixty-eight college registrars surveyed in 1948 by the American Council on Education, fifty-seven accepted the GED test as a basis for admission of veterans and thirty indicated no restrictions other than a passing score on the tests.[102] The University of Wisconsin used the GED test and the American Council on Education Psychological Examination for College Freshmen along with interviews by special admissions counselors and allowed high school non-completers to substitute special "war credits" for missing high school units.[103] Some schools, like Johns Hopkins University, also used GED test scores as the basis for admitting high school graduates with mediocre academic records.[104]

Most schools gave veterans preference over non-veterans for admission and praised their seriousness in college. A study comparing 1,500 veterans and 1,500 non-veterans at the University of California at Los Angeles in 1946 attributed veterans' better performance to their maturity and stronger motivation.[105] Researchers at the University of Minnesota compared the pre-war and post-war scholastic records of several hundred students whose college careers were interrupted by World War II and found that they earned significantly higher grade point averages in the post-war period.[106] A study of GIs attending Northwestern University found that the veterans made slightly better grades than the other students even though they came from less privileged backgrounds.[107] In a study at Iowa State College veteran students excelled over non-veterans even though their high school grades had been lower.[108]

A researcher at Indiana University cautioned that the higher grade point averages achieved by veterans could be explained by their age rather than their military service and warned in 1948 that the quality of veteran students was declining because "the present entering veterans are simply younger, and, therefore, more like the non-veteran students."[109] A subsequent four-year study comparing the performance of veterans with GED certificates and veteran high school graduates enrolled at Indiana from 1946 through 1950 found that GED-certified veterans earned poorer grades and had higher attrition rates. The study recommended raising the total GED test score required for college admission from 175 to 262 or better and limiting GED testing to persons over age twenty[110] Another study of sixteen colleges found older veterans doing well but reported that veterans who never left the States generally had better grades than those with overseas travel, with or without combat duty.[111] Typical of the studies praising the college success of veterans with GED certificates, however, was a 1950 report examining the performance of veterans accepted at Kansas State Teachers College. The researcher commented,

> Most of [the veterans] were in their early twenties and had attended Kansas high schools. Many felt inferior to high-school graduates, but their achievement spoke well for their determination. It is especially significant when one considers that none of the veterans was given any special assistance in reading or in study techniques. ... Their achievement was not so high as that of high-school graduates, but this should not be expected since the G.E.D. veterans were obliged to overcome the handicap of having had few high-school prerequisites.[112]

In this climate of enthusiasm for college admission of veterans, the American Council on Education pushed for issuance of high school diplomas to veterans based on their GED test scores. In 1948 ACE President Zook was able to announce, "Notwithstanding the many questions which may properly be raised with respect to the GED tests, it seems to me clear that we shall not again return to a system which requires actual attendance in class as an indispensable element in receiving academic credit."[113]

Opposing "War-Time" High School Diplomas for Veterans

Many schools and state departments of education were interested only in providing coursework credits to war veterans, but the American Council on Education had a much broader agenda. While Lindquist and Tyler were developing a testing instrument for measuring "general educational development" in high school, many educators were advocating accelerated high school programs and issuance of "war-time diplomas" for teens who enlisted during high school. Within months after the United States entered World War II, the U.S. Office of Education War-Time Commission urged high schools to provide accelerated education for teenagers desiring to enlist. The Commission recommended summer school, longer school days, and special scheduling to allow part-time attendance by students who farmed or secured jobs in wartime industries.[114] Schools were also encouraged to permit students to graduate early, so that they could enter the military or college during the spring. With the draft age lowered to from twenty to eighteen in November 1942, educators debated whether to encourage students to seek deferments or to grant them diplomas before they left high school. By October 1943 at least eleven states were providing diplomas for youth who had enlisted during their junior or senior year of high school.[115] One high school principal who favored this approach for enlistees with satisfactory high school records chastened, "If your conscience balks, your conscience needs education. . . . No harm can possibly come from the issuance of a diploma under such conditions. The candidate will have the equivalent before he is through, so that the spirit will be satisfied, though the letter may be lacking."[116] The colleges and universities also appeared ready to give war veterans college credits for the time they had spent in the service.[117]

The American Council on Education, however, opposed granting veteran wartime diplomas or college credits on the basis of their wartime experience. In a paper to its secondary school, college and university constituents, ACE wrote,

> The bare fact that blanket credit for military experience was granted almost universally by American schools and colleges after the last war does not mean that there was no opposition to it at that time. There was opposition, chiefly from individual faculty groups and professional associations. But the opposition was tardy, not unified or concerted, and -- most serious of all -- the opponents of blanket credit lacked an alternative program. . . . In this experience there is a clear lesson for American education today. To prevent the return of this undesirable practice there must be both concerted, anticipatory action and an educationally valid alternative program. [emphasis in original][118]

Ralph Tyler explained that his opposition to "blanket credit" stemmed from the lack of preparedness of many veterans for college-level work. He argued,

> The experience in the first World War...turned out to be a disservice to the veteran because he was often given more credit than his educational competence warranted so that he was unable to carry work successfully at the more advanced stage.... Many of these [veterans] who were given so much advanced standing failed as they took the more advanced work and thus their education was made more difficult or they dropped out altogether.[119]

According to military estimates, nearly ten million World War II veterans had not completed high school, although half of these men had some high school education.[120] Since neither the military nor the American Council on Education could grant high school credentials, it was necessary to convince state departments of education of the value of the GED alternative to high school completion. During the war years and immediately after, ACE initiated special efforts to gain support for the GED credential from state boards of education. First, the American Council on Education actively worked to discourage states from awarding wartime high school diplomas to returning veterans who had enlisted during high school. The GED testing program was also presented as superior to a wartime attempt by the Marine Corps Institute to provide high school accreditation through the New York State Board of Regents, which might have allowed development of an alternative high school credential more closely mirroring traditional high school requirements.[121] Finally, the American Council on Education recommended scores for "passing" the GED test at a level deemed "equivalent" to high school graduation.

Setting Norms for GED "High School Equivalency" Certificates

Given the aversion of the American Council on Education to granting "blanket" high school diplomas to young war recruits who had entered the military before completing their senior year, one might have expected that the standard set for passing the GED tests at a score deemed "equivalent" to high school would be quite high. Lindquist had the experience of forty-eight thousand Iowa ninth, tenth, eleventh and twelfth graders tested in the fall of 1942 on the Iowa Tests of Educational Development, large portions of which were used for the GED test. To gain norming data for the entire nation, he supervised testing of 35,000 high school seniors from around the country in the spring of 1943.[122]

While student placement was the stated purpose of the GED tests and the Iowa test was selected because of its ability to compare veterans to tested high school seniors, GED scores were not reported as percentile rankings compared to the high school senior norming group. Instead the American Council on Education chose to report scores on a T-scale, using 50 as the median score and 10 as one standard deviation from the mean. (In Iowa, a thirty-point standard score system was used, but all schools and students were also provided graphs showing their percentile ranking for each test.) The American Council on Education's Committee on Accrediting Procedures recommended that the seventh percentile be used as the recommended cut score for passing each GED subtest, that is, the score higher than seven percent of high school seniors tested for the norming study but lower than the remainder of the high school population tested.[123]

The "Tables for Converting Raw Scores to Standard Scores" indicate that the raw score required to pass the GED mathematics test at the seventh percentile (a standard score of thirty-five on the GED's 20 to 80 point scale) was eleven questions correct out of fifty. Since each question on the mathematics test had five multiple choice stems, a student guessing on all fifty questions would on average attain a raw score of ten correct, and the ACE-recommended score required only one

question correct above chance. In fact, the seventh percentile on the mathematics tests marked the lowest possible score above the chance score that could be achieved by random guessing on all test items. In the GED test of reading in social studies, the candidate again was required to answer only one question above chance -- this time out of seventy-three questions. In the GED test of reading in the natural sciences the candidate was required to answer only two questions above chance out of sixty-five. In the test of reading in literature the candidate was required to answer three questions above chance out of eighty-five. Only on the Test of Correctness and Effectiveness of Expression were candidates required to answer well above chance to pass. On this test, high school seniors at the seventh percentile scored well above chance, thereby requiring GED candidates to answer fifteen questions above chance out of one hundred.[124]

Because the Iowa test's content served as the basis for the GED test, the GED test questions were geared toward the interests and knowledge base of regular school students rather than veterans. According to a reviewer, none of the reading passages on the social studies test related to war, geography or military strategy and nearly forty percent of the items on the grammar test related to punctuation, "with a heavy concentration on the use of quotation marks for indicating conversation."[125] Lindquist described the GED tests as measuring the "lasting outcomes" of a high school education, even though he had designed the ITED to help teachers measure academic progress during high school. In an address to the National Association of State Universities in April 1944, Lindquist elaborated on this “lasting outcomes” concept.

> It is generally recognized that the lasting outcomes of a high school or college course are not the detailed descriptive facts which are taught -- most of these are forgotten by the typical student within a short time after he completes the course -- but the broad concepts, the generalizations, attitudes, skills, and procedures that are based upon or developed through the detailed materials of instruction.[126]

Ignoring the GED’s origins as an Iowa high school test, Lindquist described a whole series of wartime experiences that presumably could be quantified through the ITED/GED tests.

> Through their travels, both here and abroad, and through their contacts with people and institutions, the servicemen may learn much that they would otherwise have learned had they remained in school. The physical and economic geography of the areas and countries visited, the political and social customs and institutions of their inhabitants, and particularly their languages -- may be learned by direct observation and daily contact perhaps even more effectively than they could be learned through books. In this third category may be included too the more definitely military experiences...gained while on the job, while performing technical duties and solving military problems...This third category also includes many other even more significant opportunities for continued self-education in service: reading of newspapers, magazines and books, self-directed study and deliberation, educational movies, lectures, formal and informal discussions, correspondence with friends at home, etc.[127]

Given the ITED/GED test's emphasis on the three R's rather than on knowledge more likely acquired through military experiences or in traditional high school courses, the low scores required to pass the GED test were achievable by many elementary school graduates. Test score data from the Iowa Tests of Educational Development indicate that the scores recommended for passing each GED subtest were achieved by a majority of Iowa students at the completion of eighth grade. Published grade-percentile norms for the ITED at levels comparable to the GED pass scores showed that even when penalized for wrong answers eighty-one percent of freshmen entering Iowa high schools could pass the mathematics test, seventy percent could pass the reading test in the natural sciences, sixty percent could pass the reading test in literature, fifty-seven percent could pass the correctness and effectiveness of expression test, and fifty-five percent could pass the reading test in social studies.[128] Since the GED test did not reduce test scores for wrong answers, the percentages of Iowa freshmen passing would be, if anything, even higher than this.

The test manual and other materials distributed on the GED testing program did not identify the seventh percentile as the recommended cut score nor did they discuss why such a low norm was selected as the appropriate passing score.[129] Instead, the American Council on Education began

claiming that only 80 percent of the seniors tested in May 1943 could pass all five tests. Yet, none of the high school seniors in the 1943 norming group took all five tests.[130]

Not surprisingly, given the norms established and the reading, writing and math skills tested, the rate of veterans passing the GED test was exceedingly high. Published statistics are not available on the actual number of GED credentials issued in the early years of testing, but from the war's end to the summer of 1947 an estimated 17,500 veterans took the GED test under the individual application plan. The USAFI administered almost 400,000 high school GED tests and by 1951 the ACE Veterans Testing Service had administered 250,000 additional tests at over 560 established VTS sites. The number of civilian test forms used outside the military and VTS agencies was later estimated at over 600,000.[131]

In the first years of the program the ACE Veterans Testing Service reported that ninety-two percent of veterans taking the GED test met the recommended standard for a high school diploma.[132] At the Chicago Public Schools testing center where 6,674 veterans were tested from June 1945 to November 1946, the pass rate on the GED tests was 86.5 percent. The three reading tests proved the easiest for veterans, with a staggering ninety-eight percent passing each of these subtests. Ninety-five percent of the veterans passed the general mathematics test. The subtest that gave veterans the most trouble was the English expression test, which unlike the other subtests, required a passing score well above chance.[133]

Similarly, among a group of three thousand veterans selected randomly from a Los Angeles veteran's guidance center in 1946, eighty-six percent passed the high school GED test battery, based on the ACE recommended scores. A breakdown of the group according to years of high school attended failed to reveal any relationship between the percent passing the tests and their years of schooling.[134] The American Council on Education argued that the lack of correlation between GED scores and high school units completed was to be expected since the GED test was designed to measure long-term educational outcomes gained through war experience as well as schooling.[135]

Another study, however, questioned outright the GED test's ability to measure educational growth. James Mosel of George Washington University analyzed the correlation between high school work and GED scores for soldiers tested upon entry into the military from 1948 to 1950 before they had received any training or military experience. Mosel found only a gradual increase in mean scores for each year of high school completed with the standard deviations of such size that scores could not discriminate among years of schooling. After citing high correlations between GED test scores and the Army General Classification Test, Mosel concluded that "there is very little evidence for the validity of the GED, High School Level, as a measure of educational development apart from general mental ability."[136]

States Adopt the High School Equivalency Credentials

In the post-war period most state departments of education supported GED tests normed low enough to ensure credentials for nearly all veterans tested. After all, these applicants were soldiers, sailors and marines who could have been offered high school "war-time" diplomas had it not been for the advocacy work of the American Council on Education. In February and March of 1946, ACE staff held forty-five conferences with department of education staff in most state capitals around the country to promote the GED test and the use of the Tuttle Guide for awarding high school credentials.[137] In March 1946 and again in October the National Association of Secondary-School Principals (NASSP) published surveys of the policies used in each state to grant equivalency certificates. In spite of the ACE lobbying, one state, Delaware, continued to award "War Diplomas" to veterans who had completed their junior year and entered the service before graduation; the diploma read, "Serving with the colors; diploma on completion of eleven (or eleven and one-half, as it may be appropriate) years."[138] Iowa allowed local high schools to issue a "Special Veteran's Diploma" for two years of high school, as long as the veteran had taken American history and civics. Several states awarded credits for military activities using Carnegie unit "seat-time" standards. Minnesota recognized credit for courses in special military service schools considering

160 hours of class work equivalent to one high school credit, and Mississippi recognized military coursework as one high school unit for each 180 clock hours or five weeks of attendance.

But such "seat-time" requirements were the exception. Twenty-five states granted high school credentials using the GED test and thirty states allowed their local high schools to grant diplomas to veterans on the basis of the GED test. Commonly, the state credential was called a "High-School Equivalent Certificate." Local schools were often allowed to award high school diplomas, usually based solely on the GED test scores, although some states also required specified courses (often, American history or civics) and a minimum number of Carnegie units (usually one or two years of high school). Most states followed the American Council on Education's recommendations to set passing scores for the GED test at a minimum score of thirty-five for each subtest (the seventh percentile) or, for veterans failing one or more tests, a total five-test score of 225 (a forty-five average score per test).[139]

By Fall of 1946 the only states not issuing high school certificates or diplomas based on the GED test were Maine, Massachusetts, New Jersey and New York. Maine and Massachusetts established state boards to review each veteran applicant's educational and military records (including basic training, military training courses, correspondence courses, and military subject matter test scores) in order to individually determine eligibility for a high school credential. New Jersey, which provided for a High-School Equivalent Certificate under a statute originally passed in 1914, awarded credentials based on college admissions exams, a total of 16 high school credits based on school attendance or passing scores on state high school subject examinations, or completion of one year of college.[140]

The importance of candidates' veteran status to the initial acceptance of the GED testing program was acknowledged by a test reviewer who identified the critical limitations of the GED test in an article for the Third Mental Measurements Yearbook.

> There are...fundamental questions regarding accreditation by examination which the authors of the Tests of General Educational Development have apparently failed to face. First, written examinations fail to cover adequately the laboratory or field experiences, which practically all good courses provide. Second, written examinations fail to cover such intangibles as the social and other benefits from class discussion, the favorable emotional orientation toward a subject-matter field created by an alert, stimulating instructor, and the moral and ethical values flowing from a qualified teacher successfully leading an interested classroom of students. To deny such intangibles is to deny most of the usefulness of face-to-face teaching. Finally, there is the question whether it is desirable to permit an A-student to "get by" with a barely passing performance on an academic examination, when he might well have done distinguished work, had he taken the course.[141]

The reviewer went on to expose the generally unspoken rationale for acceptance of the GED credential, stating, "However, the war has created special circumstances; and we may be entitled to give the veterans `the benefit of the doubt.'"[142]

Promoting the GED Credential for Nonveterans

In 1947 the American Council on Education made a major marketing advance by securing the support of the New York Education Department to issue GED credentials to high school dropouts who had not served in the military. New York was the last state in the union to issue GED credentials for veterans and the first to credential nonveterans.[143] The Council dispatched Cornelius Turner, associate director of its Commission on Accreditation of Service Experiences, to Albany for two years to help establish the program, expecting to use the profits from this large new state market to finance construction of new GED test forms and research studies on the GED. The first year produced a disappointing number of GED candidates, which ACE attributed to a bitter winter and "the natural lethargy of people and their possible modesty about their own educational development."[144] Eventually the state reimbursed ACE for its development costs, with Zook reporting, “The Council took a substantive financial risk in undertaking this special project but it has the satisfaction of rendering a substantial service which was much appreciated by the New York State school system.”[145] More importantly, Zook noted,

> In order that there might be no misunderstanding concerning the validity of the Equivalency Diploma, the [New York] state education department has had enacted into law a bill which gives to the Equivalency Diploma the same acceptability as the well-known Regents' Diploma. This recognition by law of a credential based solely upon measured educational maturity and competence is a notable step in education.[146]

By mid-1947 eight states and the District of Columbia were using the GED to grant high school equivalency certificates to nonveterans.[147] Within a year twenty-two states were using the GED to credential civilians. In an apparent move to prevent current high school students from taking the GED test, states established minimum ages for testing of non-veterans, ranging from eighteen to twenty-two.[148]

For a brief period, control over the GED testing program was moved away from the American Council on Education when in 1948 the Carnegie Corporation forced a merger of the testing functions of the Carnegie Foundation for the Advancement of Teaching (with its Graduate Record Examinations), the College Entrance Examination Board, and American Council on Education (which operated the Cooperative Test Service, the Veterans Testing Service, and National Teacher Examinations).[149] The American Council on Education agreed to turn over its Veterans Testing Service and half of the VTS accrued assets from testing activities ($153,900) to the newly created Educational Testing Service; ACE retained control over policies governing the GED testing program, the Carnegie Corporation made a $50,000 grant to ACE to support its testing program, and the University of Chicago continued to supervise the testing arrangements of the Veterans Testing Service.[150] These cooperative arrangements quickly soured when the Educational Testing Service began adding a twelve percent overhead charge for supervisory services. Within a year ACE forced a revision of the original merger agreement in order to regain control over the development and supervision of the GED testing program as well as the profits from test sales.[151]

The eruption of the Korean Conflict in 1950 brought several states back into the GED veteran testing program that had dropped out during the postwar period. California, Kansas, Ohio,

Oklahoma, South Dakota and Washington State all began allowing the new Korean War veterans to earn GED certificates, although as of 1954 none of these states were granting GED credentials to non-military civilians. The expansion of the GED testing program to the general population continued slowly, with twenty-four states allowing testing for non-military civilians and twenty-four states still restricting the GED certificate to veterans and military personnel in 1954.[152]

In the 1950s the American Council on Education commissioned two studies of its GED test program. A report by Paul Dressel and John Schmid summarized existing research on the GED and analyzed data on university students admitted through the GED exam. The researchers reported that applicants admitted to college with GED scores above 275 were able to successfully complete their first years of college, but that students with lower GED scores often showed heavy course failures and dropout rates. They reasoned that completion of high school in itself demonstrated a measure of persistence and drive needed for success in college and also argued that GI benefits removed financial barriers, which they felt traditionally discriminated against lower income students who have less success, and "attracted some persons with no real interest in education."[153] The authors recommended that the GED tests be improved by including writing exercises, broadening the exams in techniques used and content to cover other educational objectives, restricting testing to specific times of the year, and raising the standard for passing to the fiftieth percentile, the average score of high school seniors in the norming group. These changes, they argued,

> ... would insure more all-around performance and would obtain greater prestige and security for the recognition program. The person who truly merits the recognition would be able to qualify, but the higher standards would rule out some who reflect discredit on the award of diplomas or the granting of college admission by examination. The result should be that the recognition would be much more meaningful and much more respected.[154]

Finally, while supporting continued use of the high school level GED tests, the authors called for studies of the relative performance of students at the ninth, tenth, eleventh, and twelfth grade level,

as well as norms comparing student performance on the GED test before entering high school to scores at the time of graduation.

The need for higher standards for the GED credential and test improvements was rebutted by a second GED study, this one authored by Ralph Tyler himself. Tyler dismissed the call for higher passing scores for the GED, arguing,

> Many persons have expressed concern over the "low scores" recommended as "passing" by the American Council's Commission on Accreditation of Service Experience. If the scores are low it is because students actually graduating from high school or actually completing successfully a general college course make low scores.... The recommended passing score at the high-school level is at the 20th percentile of students actually graduating from high school in the spring of 1943. By these standards, in each field 20% of the graduating seniors would not have received a passing grade." [emphasis added][155]

This claim is refuted by the Examiner's Manual for the GED Tests, however, which clearly shows that the minimum scores for each subtest were normed at the seventh percentile.[156] Although Tyler and others continued to assert claims about how many seniors could pass all five GED tests, the ACE did not administer the complete GED test battery to any of the seniors in either the 1943 norming study or the 1995 renorming study of the GED.[157]

In fact, data collected by Tyler on a thousand GED applicants tested by USAFI showed that one hundred percent of the examinees with twelve years of schooling passed the test. Furthermore, sixty-two percent of the examinees that had never attended high school passed all five tests and seventy percent of examinees with only one year of high school passed.[158] Tyler acknowledged that military staff recognized that the GED test required achievement at the eighth or ninth grade level rather than twelve years of high school. As he observed in his report, "[A]t one Air Force base if the individual passes the USAFI Achievement III Test at the 8th grade level, or if he has finished the 9th grade and has had varied training and work experience, he will be advised to take the high-school level GED Tests immediately."[159] Also, after reviewing several listings of high school

objectives for English, social studies and science, Tyler concluded in each case that the contemporary objectives were "broader than the abilities, skills and knowledge which are appraised in tests and examinations."[160] In spite of these limitations, Tyler reported that the GED tests satisfactorily measured the equivalence of high school and could be applied to civilians as well as veterans.

To provide for greater public acceptance of the Tyler study, the American Council on Education appointed a committee to release the report instead of Tyler. The Chairman, A. J. Brumbaugh, a former dean at the University of Chicago, explained,

> While the Armed Forces Education Program Committee felt that no one was in a better position to make this factual study than the person [Tyler] who had been responsible for devising the tests and for assisting in establishing procedures for their use, it was also felt that the conclusions derived from the study would be regarded as more impartial and would, therefore, carry more weight with the educational public if they were drawn by educators who had no part in the Fact-Finding Study.[161]

The ACE group met for two days to prepare their version of the Fact-Finding Study. The committee chose not to list the contemporary objectives for English, social studies and science, which could have brought attention to the many limitations of the GED test in measuring expected academic outcomes of high school. Instead, in keeping with the American Council on Education's affinity for the "life adjustment" curriculum, the committee noted that the GED test was limited in its ability to “measure all of the potential values which the high schools, as well as the Armed Forces, diligently try to cultivate, such as health and physical fitness, performance in citizenship, ability to use leisure time wisely, understanding of conditions fostering successful family life, and habits of organized study.”[162]

One committee member recommended that the final report not include Tyler's data showing that GED holders performed less well in college than high school graduates.[163] In the end the group

decided to reference the data and to emphasize that young people should be encouraged to complete high school. They wrote,

> First, the committee was in general agreement that passing of the Tests of General Educational Development should not be interpreted as an adequate substitute for the completion of a formal high school education. The demonstration of educational achievement by means of the GED tests constitutes an alternative avenue into college or into positions in business, industry, or government, but should not be interpreted or portrayed as the full equivalent of a high school education.[164]

Brumbaugh then introduced a theme that would be echoed for years to come by the American Council on Education:

> ...the committee recognized that the GED tests do not measure all characteristics essential for success in college or employment. At the same time the committee recognized that the completion of high school, as evidenced by the granting of a high school diploma, does not reflect all the qualifications and characteristics essential to success in college or employment. Both constitute significant data that colleges or employers may use in combination with other pertinent items of information.[165]

The GED proponents began to argue that while the GED was not equivalent to high school, high school graduation was not necessarily all that it had been purported to be either. And even though the study evaluated the performance of war veterans with GED credentials, the conclusions were extended to civilians with no similar training or experience. As to the mixed success of veterans attending college on the basis of GED tests, the ACE Committee concluded,

> There is sufficient evidence from all of the available studies to justify the continued use of the GED tests as one criterion for admission to college in lieu of the requirement of a high school diploma. Institutions should be encouraged to carry on studies in their local situations to discover factors that should be considered along with the results of the GED tests to identify students who should be advised to enter.[166]

While the high school level GED test continued to gain acceptance, the American Council on Education showed little success promoting its college-level GED test, which Lindquist had also developed during World War II. The Council had recommended that colleges grant twenty-four semester college credits in social studies, English, science and literature based on passage of four GED college-level subtests at scores appropriate to their institution, but most schools appeared unwilling to grant "general education" college credits. Dressel and Schmid found little use of the college-level GED tests among colleges and universities surveyed, and reported to the American Council on Education that "college officials do not think in terms of the generalized outcomes measured by the [college-level] GED tests, but rather in terms of specific course content. Judged on this basis, the tests are naturally considered unsatisfactory.[167] According to Tyler's report less than 1,600 college-level GED test batteries were administered in 1953, compared to 40,000 high school-level tests used in civilian testing centers.[168]

ACE Takes Control

As the American Council on Education forged ahead marketing the high school-level GED tests, staff at the United States Armed Forces Institute began to have some doubts as to the value of the program. Major concerns were raised during a comprehensive review of the USAFI subject exams conducted in the mid-1950s by Ohio State University. Forty-five professors participated in the study for the U.S. Armed Forces Institute, which recommended that end-of-the-course tests be gradually eliminated in favor of subject examinations and that new tests and norms be developed. The Ohio State University researchers encouraged USAFI to consider replacing the GED tests with subject-matter tests, which would enable USAFI to introduce coursework instruction for persons needing to complete high school. They also recommended that "USAFI reserve the right to appraise the adequacy of the test norms and to adjust them, if needed, without the expressed consent of the original test maker(s)."[169]

By this time USAFI, however, was discovering that it could not operate independently of the American Council on Education. In December 1956 without consulting ACE, the director of USAFI signed a contract with the University of Chicago for $5,000 – a paltry sum by ACE standards -- for Benjamin Bloom to develop and field test an alternative format to the GED battery. Bloom, who had studied under Ralph Tyler at Chicago, was experimenting with a taxonomy of educational objectives and wanted to prepare new GED exams in English grammar and mathematics based upon his experimental sequential item test forms. In addition, Bloom offered two extra studies for USAFI:

> (1) An analysis of the present GED Tests in relation to current educational objectives of the secondary schools which are relevant to the areas in general education, to determine specific gaps, particular objectives which are adequately sampled and objectives which are only partially sampled and to arrive at a set of recommendations for the further development of the GED Tests.
>
> (2) An analysis of the relationship between performance on GED Tests and such variables as over-all school grades, level of scholastic aptitude, interest in particular subjects, curriculums followed, plans for future education, and extent to which they have studied in particular areas relative to the GED Tests to obtain further evidence of validity for the GED Tests....[170]

Bloom had conducted the 1955 renorming study of the GED tests for the American Council on Education and shared the concerns of other researchers that the tests were normed exceedingly low and failed to measure many aspects of high school. In his proposal to USAFI, he wrote,

> The Tests of General Educational Development were first constructed in 1942. Since that time parallel tests have been developed along the lines of this initial form with only changes in content being permitted.... It would be possible to rest content with these tests in their present form and hope that few critics will arise in the future to question the value and use of these instruments."[171]

Improvements were necessary, Bloom argued, because of changes in curricula and new developments in the field of testing and because of deficiencies in the GED testing instrument that he had already observed.

> There have been a number of critics who have raised serious questions about the appropriateness of these tests for accreditation purposes and additional critics are likely to further attack this program if the tests are to continue to be used in their present form. Furthermore, we ourselves are aware of a number of limitations in these tests. For example, the passing score on one form of the Mathematics test is below the chance level, the reliability of some of the tests is not as high as we would desire, the relationships between the test scores and measures of scholastic aptitude are higher than we believe desirable, the number of items used to sample an individual's level of achievement in certain aspects of mathematics and science are lower than appears defensible, whole areas of the humanities, such as art and music are not sampled, etc.[172]

The American Council on Education did not learn about the Bloom study until nearly a year after the contract was signed, and ACE staff and commissioners expressed concerns that USAFI should consider the GED test inadequate and entertain the idea of using another testing instrument or approach. After a meeting in which the director of USAFI asserted his authority to conduct any studies USAFI felt were needed, Cornelius Turner of the ACE staff expressed his fears that publicity about the Bloom study would jeopardize public confidence in the GED program, noting that several states were not wholeheartedly in support of the GED test. Furthermore, Turner was concerned that Bloom would publicize "whatever information he gathers as a result of this study," as evidenced by Bloom's articles on the 1955 norming study which had not been approved by ACE prior to publication.[173] A luncheon meeting was arranged between ACE representatives and several top military officers after which the military terminated the Bloom study and notified the director of USAFI that "any USAFI proposals concerning modification of the GED testing program be submitted to this Office [Armed Forces Information and Education] in order that they may be

coordinated with the Services prior to submission to the President of the American Council on Education..."[174] At its May 19, 1958, meeting the American Council on Education's Commission on Accreditation of Service Experiences voted unanimously to express its appreciation to the Department of Defense "for its cooperation in terminating studies on review of the GED tests, which were contracted for by USAFI."[175] The Commission also reported that the Department of Defense had given ACE a new $5,000 grant to publish additional materials on its testing-for-credit policies.

Meanwhile, the GED testing program enjoyed a steady growth. In 1957 thirty-seven new testing sites were established by the ACE Veterans Testing Service, bringing the total to 634.[176] Bloom continued his criticism of the credential, with little response. That year Bloom and a colleague from the University of Chicago warned, "the GED tests measure only a small portion of the educational objectives of the schools, and other indices of the merits of a school are needed before one has a completely valid indicator of the educational outcomes of twelve years of public school attendance."[177] Such criticisms generally fell on deaf ears. In 1959 the American Council on Education was able to report that the number of civilians taking the GED tests had surpassed the number of veterans tested. In 1963 to emphasize the civilian nature of the program, the American Council on Education changed the name of its Veterans Testing Service to the General Educational Development (GED) Testing Service.[178]

“Teaching to the Test”

In spite of the availability of the GED test, a large number of World War II veterans used the GI bill to enroll in secondary education programs upon their return from the service. While over two million World War II veterans attended college under the GI Bill, an estimated 3.2 million

veterans participated in educational programs below the college level.[179] In the 1947-48 school year, enrollment in adult education and night schools operated by public school systems exceeded one million. In 1949-50 enrollment passed the 1.5 million mark, with more than half of the public school systems in urban areas of 2,500 population or more operating continuation or evening schools.[180] A number of school systems responded to the needs of veterans in the post-war period by creating separate high school programs or increasing their adult school activities. Detroit established a Veterans Institute located at the city's technical high school, an evening adult education program and apprenticeship training as well as the regular comprehensive high school. Washington, D.C., set up a Veterans High School Center where except for a mechanical drawing class veterans were segregated from other high school students. Staff reported good relationships between the high school students and the veterans, noting that, "the girls' rifle team is using a Marine Corps rifle instructor as their coach, and a former WAC is helping in the drilling of the Girl Cadets."[181]

Some institutions, however, saw teaching to the GED test as an alternative that could allow veterans to by-pass the time required for completing high school. An Ohio State University educator reported, "All around us we hear of men who started back to high school and `dropped out' after a few weeks or a month."[182] His solution was to set up twelve weeks of individualized instruction in math, reading and discussion, and science, after which his adult students took the GED test in order to earn a high school credential.

In his review of military uses of the GED, Ralph Tyler also acknowledged evidence of the GED "teaching-to-the-test" mentality that is endemic to the GED today. Tyler's report included the example of a military center that offered "a GED preparatory course of two months' duration in

which a systematic covering of the five areas is attempted."[183] The low level of student achievement required to pass the GED test facilitated this approach, as Tyler observed:

> Oftentimes the applicant will be advised to brush up on elementary mathematics at the as a high school credentialing device and to study an English grammar text at about the same level. A few agencies also suggest that the GED applicant read some English literature.... Three agencies offer special refresher courses for persons seeking to take the GED Tests. These courses involve only ten or fifteen hours of instruction spread over several weeks. [emphasis added][184]

Tyler also visited agencies that advised unsuccessful GED test-takers to enroll in evening or part-time courses, not to earn high school credits, but to gain the knowledge needed to pass the GED test.

During the 1960s with the baby boomers approaching adulthood and new federal support for GED instruction, the number of people taking the GED test increased nearly fivefold, from 61,093 in 1960 to 293,451 in 1969 and the number of GED testing sites increased from 658 to 1,566.[185] The federal government began funding GED test instruction in the 1960s as part of the War on Poverty. The Economic Opportunity Act of 1964 provided federal funds for basic education for adults who had not completed eighth grade, and the 1970 Adult Education Act reauthorization expanded the program to include secondary education, although its priority remained on persons with lower grade skills. Adult educators championed GED test instruction, which was far less costly than full-fledged high school completion programs and still capitalized on students' motivation to secure a high school credential. While state plans were required to place special emphasis on adult basic education, that is, instruction in skills below eighth grade, in 1978 the House of Representatives' Committee on Education and Labor estimated that over 900,000 adults had achieved a high school equivalency credential under the Adult Education Act.[186] The committee criticized adult education programs for failing to give priority to the least educated

adults, quoting the testimony of the Director of the U.S. Office of Education Division of Adult Education that,

> . . . the failure to attract the least educated adults is attributable in part to local adult education directors' inclination to serve adults who are striving to earn their high school diploma and are demanding services. This goal is not often part of the motivation of those functioning at the fourth grade level and below.[187]

Moving completely away from the GED's purported objective of measuring the "lasting outcomes" of high school that adults had acquired through their life experiences, the federal Job Corps developed a set of self-paced units of instruction based on the GED test items, for use with high school age youth. According to Sar Levitan and Benjamin Johnston who reviewed the first ten years of the Job Corps' history, the GED credential offered "the high school `education' demanded by a credentials-conscious society."[188] The GED's appeal rested in no small part on the Job Corps experience that even youth testing below the 5.5 grade level minimum on the Stanford Achievement Test could be taught to pass the GED through a 200-hour preparatory course. The authors concluded, "An expanded GED program promised great rewards for all concerned: the goal was achievable by many in a reasonable period of time and obviously valuable in the outside world."[189]

Instructional programs for the GED test were also financed by the Work Incentive Program (WIN) for mothers receiving Aid to Families with Dependent Children (AFDC). A 1972 study for the Department of Labor estimated that twelve percent of WIN trainees were in GED instruction.[190] In their assessment of the WIN program, evaluators stressed the importance of the high school credential for women on welfare, noting that occupations open to men without high school diplomas were usually closed to women and that the fields open to women, particularly in clerical and health work, often required a high school diploma or equivalency.[191] Another manpower study suggested

that GED instruction was more valuable for the credential received rather than the basic skills acquired, observing,

> Apparently, GED as a credential can increase the placement potential of those who are otherwise well equipped for employment, though it appears not to help those rated as in need of help or hard core unemployed. If this interpretation is correct, it is the symbolic value of GED, rather than any real gains in qualifications or skills, which can make a difference in employability.[192]

In 1978 the American Council on Education released an officially sanctioned “practice test,” that further fueled the GED “teaching to the test” mentality. Prior to 1978 many adult educators offering GED classes had focused instruction on reading comprehension, vocabulary skills, grammar and math, often using a variety of textbooks designed for the GED "student" or even the "pre-GED student." There was no way to predict when a student was ready to pass the test battery, although many adult education programs would only begin GED test-taking drills after a student had reached a seventh or eighth grade reading level on standardized tests available.[193] The challenge of improving student reading levels and academic skills was reduced when along with the 1978 version of the GED test, the American Council on Education prepared "Official GED Practice Tests." These tests were designed to help candidates determine when they could pass the GED test. With the distribution of the "practice tests," adult educators could more easily predict the level of skill required to pass the GED, limit their instruction to the exact types of questions on the exam, and shorten the time provided students for their GED test instruction.[194]

Offering the GED to School Age Youth

Beginning in the 1970s the American Council on Education made a number of policy changes in order to accommodate the federal government's interest in supporting GED testing for disadvantaged teenagers. Since 1955 the American Council on Education had required a minimum age of twenty or twenty-one for obtaining a GED credential. The Council later explained this

policy, stating, “While this seems rather conservative by today's standards, it clearly represented a concern that the program not be seen by young people as an attractive alternative to a regular high school program of study.”[195] A request by Job Corps to provide educational credentials for school age high school dropouts led to exceptions to the age requirements. In the mid-1970s the American Council on Education commissioned a revised GED test that could be used with the high school-age population. The ACE not only lowered the age allowed for taking the GED test, but also asked the Educational Testing Service (ETS), which received the contract to rewrite the GED test for 1978, to reword questions to insure that they could be used for youth as young as fourteen years of age. The Educational Testing Service outlined the request in a project paper.

> In one state the minimum age for compulsory education had been already lowered to 14 years. It was therefore decided to conduct test administrations of the new forms at grade 9 (the grade during which most youngsters attain the age of 14 years), and also at grades 10 and 11, in addition to the grade 12 reference group . . .. In fact, the new GED tests were found to be only slightly difficult for grade 9 students, with the middle difficulty for all five tests in the battery occurring at about grade 10, or a little higher. [emphasis added][196]

The ACE identified a number of areas where it wanted the difficulty level of the GED test to be reduced. The ETS was asked to shorten the reading passages in the tests, simplify the language of the math questions, and reduce the total time required for GED testing. The ETS reported, "The GED Program had...received complaints that too much higher level mathematics was being required" and agreed to ACE specifications to develop math problems with practical applications and to adapt the reading level of math problems "to the GED population."[197] The test writers indicated that they would continue including a small number of higher level mathematics items, while acknowledging that "many of the concepts...which were classified as Algebra and/or geometry were concepts that most pupils were exposed to during or prior to 9th grade" and that these items were not significant in determining whether candidates passed or failed the math subtest.

Citing criticisms of the emphasis on reading in the science and social studies subtests, ACE recommended use of "concept" test items which would be "noncourse oriented, with the emphasis placed on information that the GED candidate may have acquired through mass media or general reading."[198] Reading passages preceding science questions were expected to minimize the actual knowledge of science required of the GED candidate. The Educational Testing Service explained,

> Graphs, charts, and diagrams will be used to supplement the written material where appropriate. Although the majority of the test items will deal with the interpretation of information and ideas presented in the passages, some outside knowledge of basic principles of science may be required in order to answer some of the items. [emphasis added][199]

The American Council on Education requested easier reading passages for the science questions, specifying: "Short, simple sentences free of unnecessarily abstract, difficult, or technical vocabulary should predominate. Pictures, graphs, or charts should also be used to help reduce the reading load."[200] Likewise, the social science test was to include reading comprehension items "at a reduced reading level and pitched to issues of greater relevancy to the everyday life of GED candidates."[201]

Finally acknowledging the close proximity of the recommended GED passing scores to scores which could be achieved purely by guessing, the American Council on Education asked ETS to increase the number of multiple choice stems to five for all questions. The ETS recounted: "While the need to equate new tests with older forms through the use of common items has held this process back somewhat, the objective has essentially been realized, with ETS research showing that for virtually all the tests the cut score is now above the chance score." [emphasis added][202]

Even with the reduced odds for guessing correct answers, the standard score of 35, which was recommended by the American Council on Education as the minimum passing score, was reached on each subtest by over 80 percent of ninth grade students tested in spring of 1977 for the ETS equating study. All but 12 percent of ninth graders (and 6 percent of twelfth graders) passed

the reading subtest with a standard score of 35 or better. Although U.S. history courses are not typically offered until tenth or eleventh grade, all but 17 percent of freshmen passed the social studies subtest, as did all but 6 percent of high school seniors.[203] In fact, the ETS equating study estimated that 73 percent of ninth graders could pass all five GED subtests at the passing scores recommended by the American Council on Education, as could 77 percent of tenth graders, 82 percent of eleventh graders and 83 percent of twelfth graders.[204] These results are not surprising since the GED test does not emphasize high school subjects but only those academic skills commonly acquired in elementary school and reinforced in ninth grade remedial classes. The ETS paper on standardizing the 1978 GED test explained,

> Ordinarily, questions considering the usefulness of a test with pupils at a particular grade/age level would also include a comparison of the content of the tests being investigated with the accepted curricula for the grade/age level of the pupils being tested....The extremely broad range of performance of grade 12 pupils on survey tests such as the GED virtually requires that many items in such tests are closely related to educational concepts that are first learned at grade 9, or even earlier. The effort to develop tests that contain a large number of lower than average difficulty items for grade 12 students also results in the inclusion of a large number of items that reflect educational topics for levels substantially lower than the grade 12 level.[205]

After the tests were renormed in 1980, the American Council on Education had to increase its minimum passing score to forty for each subtest (reportedly, the sixteenth percentile for the high school norming group) because the standard score of thirty-five (the seventh percentile) had fallen so close to chance.[206] Another change, however, insured that more candidates would pass in spite of the higher score requirements. Spille recounted that several testing directors were complaining that under the new time limits some candidates were "unable to complete the tests without working at a rate substantially faster than was comfortable."[207] In June 1981 the American Council on Education expanded the time allowed on the math subtest from sixty to ninety minutes and on the writing skills subtest from sixty to seventy-five minutes.[208] The ACE did not renorm the subtests

with high school seniors although testing data obtained from Milwaukee Area Technical College, Wisconsin's largest GED testing center found significant differences in passing rates with longer time limits.[209]

Meanwhile, the American Council on Education allowed increased use of the GED test among high school age youth in 1981 when it eliminated its minimum age requirement for taking the test, leaving the establishment of age restrictions entirely in the hands of state departments of education. As of 1985 five states had lowered the minimum age for GED testing to sixteen, ten states used an age seventeen limit, and eight more states allowed exceptions for younger persons under particular conditions.[210]

The extent to which marketing considerations rather than the standards for high school coursework influenced test construction can be seen in the ACE specifications which directed the 1978 ETS test writers to avoid questions on the social studies test related to United States history and government -- or even to an English-speaking heritage.

> Since the GED testing program has achieved an international stature, it is imperative that the tests be developed with no intentional English speaking cultural, economic, or political bias. Particular efforts should be directed towards development of the social studies and reading tests to ensure no alienation of examinees of other countries, especially Canada. This concern may be alleviated by de-emphasizing concepts unique to the United States, and inclusion of some reading passages and problems commonly encountered in Canada and the U.S.[211]

When Canadian administrators reviewed the "generic" social studies subtest, they declared it unacceptable and demanded a separate social studies subtest for Canada. Meanwhile the "generic" social studies exam was used in the United States as well as for Canadian candidates requiring Braille, large print or audio taped exams. A French version of the five GED subtests was prepared by the Canadian province of New Brunswick -- using the Canadian social studies questions -- and promoted for use in Quebec. After the provinces of Quebec and Ontario declined to enter the GED testing program, extra copies of the printed "French-Canadian" tests were used in Haiti and with

Haitian immigrants to New York.[212] Spanish-language GED tests were introduced based on the high school curriculum in Puerto Rico and normed with Puerto Rican high school students, and then were used primarily in the continental U.S.[213]

ACE Reacts to the Call for Higher Standards in High School

As the American Council on Education was reducing the academic skills required to pass the GED test, producing "generic" reading passages, and introducing "practice tests" that could shorten the preparation time for GED instruction, national studies were calling for higher educational standards, more "seat-time" in school, more homework, and an increase in the number of Carnegie units required for high school graduation. In 1983 the National Commission on Excellence in Education released A Nation at Risk, which called for a "Five New Basics" core high school curriculum, higher standards for high school graduation, and longer school days and years.[214]

Henry Spille of the American Council on Education issued a memorandum to state GED administrators and state directors of adult education regarding the study. He candidly explained: "You will probably be receiving questions from your superiors, legislators, and others regarding the GED tests and how well they address, or do not address, the recommendations made in the report, A Nation at Risk. I will try to give you some assistance by responding, from our perspective, to each of the report's recommendations."[215] Several of Spille's examples are illuminating. Spille noted that the Nation at Risk study recommended that significantly more time be devoted to higher level math and science either through more effective use of the present school day, longer school days or a lengthened school year. His response:

> Because of prior learning that adults have acquired and bring to the teaching/learning process and setting, they often need less time, not more time, to learn the basics of reading, writing and computation. Availability of other than time-based assessment methods should allow adults to progress at their own pace.[216]

Just how much time adults needed was explained in Spille's reaction to the Nation at Risk recommendation that students in high school be assigned far more homework.

> The typical GED examinee spends 20 hours preparing to take the GED Test. Many of the examinees do not prepare by enrolling in classes; they study independently. Additional homework for them is probably not important; focused learning time is probably the key.[217]

In response to the Nation at Risk recommendation that, "Grades should be indicators of academic achievement so they can be relied on as evidence of a student's readiness for further study," American Council on Education staff responded with a claim that had been Ralph Tyler and E. F. Lindquist's dream,

> Grades are not issued on the basis of the GED Tests. The Test scores are direct indicators of academic achievement. Unlike grades, the Test scores (as indicators of readiness for further study) are not contaminated with irrelevant personal and social considerations.[218]

The heart of the Nation at Risk report was a recommendation that all high school students be required to complete four years of English, three years of mathematics, three years of science, three years of social studies and one-half year of computer science. Additionally, college-bound students were encouraged to take two years of foreign language. Spille responded, "The five tests of the current battery measure the lasting outcomes of a high school program of study in all of the areas (English -- Reading Skills and Writing Skills -- Mathematics, Science, and Social Studies) except computer science."[219] In fact, this response directly contradicted an earlier Spille memorandum that suggested that the entire GED test battery might equate to only four units of introductory high school subjects and not to the thirteen units of English, math, science and social studies recommended by Nation at Risk. In September 1980 Spille had cautioned state GED administrators,

> ...a combination of Test 1, the Writing Skills Test, and Test 4, the Reading Skills Test, may seem a reasonable basis for awarding one or more Carnegie units in English because it is likely that they measure learning outcomes that are comparable to those achieved through successful completion of regular high school English courses (except, of course, that no composition exercises are included). The award of a unit in general science, general mathematics and general social studies on the basis of scores of the Science Test, the Mathematics Test and the Social Studies Test respectively also may be appropriate, if the concepts and developed abilities measured on these tests are comparable to those normally acquired through successful completion of a high school's or local school district's "general" courses.[220]

Even as he defended the average twenty-hour preparation time spent, Spille urged colleges and universities to accept GED holders with passing scores as equal to high school graduates. In a 1985 speech to GED administrators Spille criticized postsecondary institutions that required GED test scores above passing for college admission. To Spille like his predecessors, the strength of the GED lay in its statistical precision.

> The GEDTS staff very carefully identifies and defines the educational skills and knowledge that are measured on the GED Tests. All forms of the GED Tests measure these skills and knowledge, and equating of test forms is meticulously done. There is no significant variability among test forms, so the GED credential represents specific achievement of these skills and knowledge. Can high schools in a single state or even a single school district make such a statement, i.e., that the diplomas their graduates have received represent the achievement of a well-defined set of skills and knowledge at a well-defined standard? I don't believe they can. Yet, the high school diplomas are generally accepted without anyone questioning the educational skills and knowledge they represent and the standards used to judge the individual student's competence.[221]

Spille encouraged GED administrators to oppose practices of state department of education to require candidates to pass a test on the U.S. or state Constitution or to require at least one semester of credits from an adult high school. "What do we at the GED Testing Service want for our graduates and for the program?" Spille asked rhetorically.

> <u>The ideal GED world that I envision is one that accepts the GED credential and does not emphasize the test scores.</u> . . I believe the GED should be universally accepted

> because of the uniformity of the educational skills and knowledge measured on all forms of the Tests, and because of the small variability among the standards used to award it. In these two ways, the GED credential is superior to the high school diploma, which already enjoys universal acceptance. [emphasis in the original][222]

Meanwhile, in the wake of the Nation at Risk recommendations, state governments were increasing standards for high school graduates. Between 1980 and 1985, thirty-eight states raised their minimum Carnegie unit course requirements for high school graduation and eighteen states established new minimum-competency testing programs.[223]

When the American Council on Education developed its specifications for the 1988 GED test battery, the nationwide emphasis on increased Carnegie units and more math and science coursework was ignored. At the same that that the American Council on Education announced that the new GED test would "demand more high level thinking and problem-solving skills," the Council reassured its clients -- in an article entitled “Don’t Hurry to Take the GED Tests!” – that pass rates for the test were expected to remain about the same. The GED Testing Service explained,

> While it is true that the revised tests will require a slightly higher level of problem solving and critical thinking skills than do the current tests, as well as the ability to write coherently, most of the changes represent only small adjustments to the levels of content mastery required to pass the tests. For example, the percentage of questions on the mathematics test that require the use of concepts from algebra will increase from 25% to 30%--but this is a difference of only 2-3 questions per test. [emphasis in original][224]

While ACE publications lauded the test’s new emphasis on high school preparation for the "world of work," the GED teacher’s guide explained that would be accomplished by including "written passages that involve a working person involved in some task (e.g., a math item might involve an employee trying to describe in words the information contained in a graph.)"[225] Similarly, the GED test’s new focus on "computer technology" would not require students to use computers or understand their use but would be handled superficially by references in questions

(e.g., a math item might require student to calculate how long it would take for a computer printer to print a 300-word document). Likewise, the new test would measure "consumer awareness" by including examples of consumer activities in the science reading passages and math exercises.[226]

For the first time in 1988 the GED test battery included an essay test as part of the writing subtest. While continuing to maintain that the multiple choice writing skills subtest provided an adequate indirect measure of writing, the American Council on Education was receiving pressure to include an actual writing requirement.[227] The Council reported that by October 1985, seventy-one percent of candidates taking the GED test in the United States would be in states requiring writing assessments of high school graduates, and in July 1986, New York State began requiring GED candidates to present a two hundred word composition.[228] Accordingly, in 1988 ACE began requiring GED candidates to complete an essay which was holistically scored and combined with the multiple choice test score on the writing subtest to provide an overall writing test score. The essay question was on a topic of general knowledge and designed to measure the student's ability to write coherently. It did not require a demonstration of competence in a high school subject area. As outlined in the GED technical manual,

> The topic must be based upon information or a situation that is general enough to be familiar to most examinees. For example, a topic calling for a writer's views regarding the effect of automobiles on American life might well be appropriate, while one calling for an opinion of the space shuttle's value to the American economy would fail to meet this specification because it would require specialized knowledge.[229]

In information provided to the Princeton Review, ACE reported that staff hired to grade the essays are expected to read at least 240 essays every eight hours -- allowing an average of two minutes time to read and grade each essay.[230] By 1989, after all of its GED test changes, the American Council on Education reported that GED candidates had increased their average study time

preparing for the GED test to 30 and 1/2 hours -- ten hours above the average preparation time reported in 1980.[231]

Since most GED candidates are no longer war veterans and neither the GED test preparation time nor the GED "curriculum" are persuasive evidence for considering the credential equal to high school completion, the American Council on Education uses its norming program with high school seniors rather than comparisons with other standardized or course completion tests as the justification that this test measures the outcomes of four years of high school. ACE's argument is that if GED candidates can score as well on a norm-referenced test as many high school seniors, they must have acquired an education equivalent to that of high school graduates. In 1994 half of the states required GED candidates to reach the seventh percentile of the normed high school population on each of the GED subtests. Most of the other states required subtest scores at the sixteenth percentile, where eighty-four percent of seniors in the norming study passed.[232] The ACE claim that thirty percent or more of high school seniors could not pass the GED test was based on the test scores of seniors in the American Council on Education's 1987 norming group who were given all five subtests in the battery. For the 1987 national norming study only 1,278 high school seniors took all five GED subtests, even though more than 20,000 students were asked to take one of the subtests.[233] Unlike the ACT, SAT, AFQT and other tests which attract test takers with strong motivation for entering college or the military, the GED test has no value to high school students in the norming group nor are they typically offered coaching instructions to improve their scores or opportunities to retake tests after additional study. The American Council on Education does not provide information on how it motivates high school seniors taking the full GED test battery, and the 1993 norming experience in Wisconsin suggested serious problems with student motivation.

To secure an adequate norming study for high school equivalency, the GED publishers also need an assessment tool that measure skills or knowledge that are being acquired in high school. The GED test appears to be an effective tool for gauging adult literacy: the National Adult Literacy Survey (NALS) found that GED holders had similar mean scores on prose, document and quantitative literacy as high school graduates among the population of young adults not attending college.[234] But, the distance between the GED test and the demands (beyond basic literacy) of high school coursework has been suggested by the GED test preparation guide prepared by the Princeton Review. In **The Princeton Review: Cracking the GED** (2001 Edition), the authors wrote about the GED math test, "If the GED math test covered all the math topics they teach in high school, it might be a pretty tough test. Fortunately, it doesn't and it isn't....The test does not cover most of the normal high school algebra curriculum; there is also nothing about calculus, or even precalculus. No logs, no proofs, no advanced graphing. To make things even easier, the math section begins with an entire page of formulas so that in case you don't remember how to find the area of a triangle, for example, you can always just look it up." [235] The Princeton Review test preparation guide described the GED social studies test as not requiring "any specific knowledge of history or economics or geography (or any other social studies topics) at all. Every question will be based on a brief passage, and the information you need to answer the question will almost always be contained in that passage. Thus, the social studies test is really just a reading comprehension test."[236] A similar critique was offered for the GED science test: "Like the social studies test, the GED science test requires no specific knowledge of the subject. You will not need to memorize the periodic table, or know the composition of a cell or the difference between a bacteria and a fungus. Every question will be based on a brief passage, and the information you need to answer the question will almost always be contained in that passage. Thus, the science test is also mostly just a reading comprehension test."[237] The Princeton Review guide described the Literature and the Arts test as more: "in some ways it is

much more purely a reading comprehension test than the others were. There are no distracting charts, no quasi-math questions, no specialized scientific vocabulary."[238]

In 2002 the American Council on Education released its latest version of the GED test. Like its predecessors the current GED test battery includes subtests in mathematics, social studies, science, reading, and writing skills, with multiple choice items from which the examinee must select the correct answer. (Eight of fifty math questions ask the test takers to supply their own numerical answer.) Half of the math test may be completed using a scientific calculator, although the math questions in that section do not appear to require computation skills beyond grade school arithmetic.[239]

Based on the performance of about 1,500 high school seniors in the United States given the test battery, the GED Testing Service announced that only 68 percent of graduating seniors nationally can pass the test at the recommended passing scores – a 410 minimum for each subtest and a 2,250 total. (The 2002 test series uses a scale of 200 to 800, multiplying the previous scale of 20 to 80 by 10.) High school students in grades 9, 10 and 11 were not tested. [240]

Blurring the Distinction Between High School Graduation and the GED

Much of the GED marketing in the last twenty years has focused on labeling the GED credential as a "diploma" and blurring the distinction between high school graduation and attainment of a GED credential. For a brief period in the late 1980s the American Council on Education moved away from its longstanding claims that GED holders had comparable performance to high school graduates in colleges and employment. Douglas Whitney, Director of the GED Testing Service, cautioned GED administrators at their 1987 annual conference,

> ...our research should take care to focus on benefits associated with GED graduation. That is to say, we know that it is preferable for young persons who can do so to graduate from high school, and that young high school graduates will persist at higher rates in college and military settings. These comparisons are fruitless, however, because our students will not return to high school. The point is, we need

> to compare our GED graduates to those who have no high school credential in order to identify the comparative benefits of the GED for the individuals themselves and for society.[241]

This "truth in testing" period was, however, short-lived. Two years later when Whitney addressed the GED Administrators Conference he urged the state participants to promote measures that would label the GED credential as equal to high school graduation. Whitney advocated several measures to "build the credibility of the GED program" at the state level: “use the term "diploma" to help GED achieve parity with other traditional diploma programs; seek legislation to recognize the GED diplomas as the legal equivalent of a traditional diploma (as in Pennsylvania); stop the GED Tests from being used as part of a credit-based diploma program; refer to the GED program as a `dropout recovery program’"[242]

The majority of GED candidates report that they are seeking the credential not only as evidence that they have gained the skills of high school but also as a stepping stone for college. Nearly two-thirds of U.S. GED candidates report that their reason for taking the tests was for further education beyond the high school level.[243] Even though the GED test does not purport to measure the advanced math, science, social studies, literary or research skills expected of college preparatory students, the American Council on Education urges colleges to use GED test scores as "rank in graduating class" equivalents for GED holders for purposes of admission and award of college scholarships.[244] Through its college loan requirements the federal government also encourages the notion that skills necessary to pass the GED test are adequate for college work. A study for the U.S. Department of Education reported default rates on Guaranteed Student Loans for postsecondary education of 56.2 percent for high school dropouts and 44.2 percent for GED holders, compared to 14.4 percent for high school graduates. The response of the Department of Education was to tighten the "ability to benefit" provisions for high school dropouts, effectively encouraging more high

school non-completers to utilize GED testing as a means to secure federal funding for their education.[245]

An example of the political utility of the GED credential for addressing dropout concerns could be seen in the New York City school system, which introduced a requirement that high school students complete a three-year sequence of Regents-certified math courses (in algebra, geometry and trigonometry) and three years of science (including biology, earth science, chemistry or physics).[246] At the same time, the school system allowed students who opted out of regular coursework to enroll in GED classes which meet only two and a half hours a day and have no homework requirements. According to local school staff, New York City students reading at an eighth grade level needed only three to six months of preparation in order to pass the high school equivalency test.[247] Similarly, the State of Ohio implemented a welfare reform initiative that imposed financial sanctions on truant teenage mothers receiving public assistance while offering a $62 monthly bonus to those truant mothers who dropped out of high school altogether and attended a two-hour a week GED class.[248]

Nationally, the debate over education goals might have identified the GED as a threat to demands that United States students "be first in the world in mathematics and science achievement" and that all students leave grade 12 "having demonstrated competency over challenging subsject matter including English, mathematics, science, foreign languages, civics and government, economics, arts, history and geography."[249] Even though most GED test takers have completed two years or less of high school, the thirteen-member National Education Panel on High School Completion (which included the policy research director for the GED Testing Service) successfully inserted a provision in the National Education Goals that high school completion could be achieved either by four years in the newly improved American high schools or by passing the GED test.[250]

Conclusion

In 1999 Gardner High School in Massachusetts held a graduation ceremony for thirty-nine World War II veterans who had entered the service before completing high school. Encouraged by the response of the veterans, many of whom were drafted while in school, Robert McKean of the Massachusetts Department of Veterans Services contacted other Massachusetts high schools and state governments encouraging them to issue diplomas to men and women who had served in World War II. The high school credentialing program, which McKean called "Operation Recognition," quickly attracted media attention and was embraced by high schools around the country. Legislation supporting the credentials has been adopted by three dozen states and several thousand veterans, including GED holders, have been awarded high school diplomas based on their wartime service. McKean called it "a small, overdue gesture of our society's gratitude for the sacrifice these individuals made in the name of freedom."[251]

The popularity of "Operation Recognition" suggests how warmly states and local school districts would have embraced a "wartime high school diploma" program after World War II, had such an option not been opposed by the American Council on Education. Instead, a small group of educational reformers used the GED test to help push for a "general education" high school curriculum and to end the high school Carnegie unit. Because of the power of the American Council on Education and the private financial resources it was able to call forth for its projects, these testing proponents were able to dominate national educational policy regarding state high school equivalency credentials while showing far less success in dismantling the Carnegie unit high school. As a result, the GED test presented a minimalist prescription for high school skills based on a production model of education. Extension of the GED credential to non-veterans bolstered the American Council on Education's attack on high school "seat-time" as a measure of educational attainment and furthered ACE's "general education" curriculum emphasizing "life adjustment" activities rather than academic disciplines.

The fact that the GED test has changed very little since its inception over half a century ago and enjoys widespread acceptance might lead policy makers to believe that debates over what constituted the core of high school were successfully resolved in 1943, but such debates did not occur. The popularity of the GED credential was cemented during the postwar period when thousands of World War II veterans used the test to gain admission to college. During the 1950s while the Soviet's launching of Sputnik led to new emphasis in American high schools on rigorous math and science coursework, the GED test was requiring students to answer only a few questions above the chance level achieved by guessing on all of the multiple choice items. In spite of concerns raised by the United States Armed Forces Institute, ACE's own studies and Benjamin Bloom of the University of Chicago, the American Council on Education locked the GED test into its original Iowa Tests of Educational Development multiple choice format measuring reading, elementary math and grammar editing skills.

The GED test provided an appealing adult education credentialing program in the 1960s and 1970s for the War on Poverty and subsequent employment training and welfare initiatives. In the 1980s reformers of public high schools demanded more rigorous high school course content, advanced courses in science and math, increased foreign language requirements, longer school days and school years, and more homework. These high school reform initiatives did not discuss the GED credential or the implications of their recommendations for high school equivalency standards, and educators generally ignored the growth of GED testing among the teenage population. Furthermore, during this period the GED test, which had been downgraded in 1978, was requiring even lower levels of reading and math skills than the earlier test versions. While most state legislatures increased high school graduation standards the American Council on Education was able to deflect scrutiny of the GED test by adding a short essay question (typically graded in two minutes and focused on a topic requiring no specialized knowledge), inserting references to employment and to computers, and including a few open-answer math questions. In 2002 the GED

math test allowed use of a scientific calculator, but the problems tested remain concentrated on arithmetic skills typically taught in fifth and sixth grades; the use of the computer remains untested. Politicians continue to call for high-stakes graduation testing and more challenging high school coursework, but the GED's acceptance as an alternative completion test, in many states defined as the legal equivalent to the high school diploma, remains unchallenged.

While the GED test remained frozen in its World War II design, E. F. Lindquist and Ralph Tyler moved on to other endeavors. Lindquist remained committed to the multiple choice test format -- marketing his Iowa tests nationally and in 1959 creating the American College Testing (ACT) Program as a competitor to the Educational Testing Service's Scholastic Aptitude Test (SAT) for college applicants. Tyler moved into curriculum development, evaluation and educational policy. Indeed, Tyler's later observations about the limitations of the pre-war measurement movement are instructive in reviewing the history of the GED. In a retrospective on testing in 1976, he cautioned,

> [T]he testing movement promoted the simplistic notion that all the important outcomes of schooling could be adequately appraised by achievement tests. The ease with which objective tests can be given, scored, and summarized tempts school administrators to collect these data as the sole comprehensive and comparable information available about student learning.[252]

In advice that seems particularly appropriate for the institution which converted a short-term college admissions program for war veterans into a high school credentialing program for civilian dropouts, Tyler once cautioned: "New conditions require a critical reexamination of prevailing assumptions, theories, practices, and instruments, in order to identify those that are likely to be inappropriate for the new tasks."[253]

Today, dropouts who have missed two or more years of high school are enrolled in GED test preparation classes where they "study" the GED test. The test, which progressive educators promised could reduce the complex organizations of American high schools into a series of multiple

choice items, has become "high school." In too many classrooms, students hone their test-taking skills and practice answering questions from the "Official GED Practice Tests." These types of instructional programs are in need of review for their relevancy to the educational needs, beyond credentialing, of the young people and adults they purport to serve. It is time to take a new look at America's GED “high school.”

Endnotes

1 The author, Lois M. Quinn, is a senior scientist with the University of Wisconsin-Milwaukee Employment and Training Institute, 161 W. Wisconsin Avenue, Suite 6000, Milwaukee, WI 53203. This history draws upon archival materials from the National Archives, the American Council on Education archives (now at the Hoover Institute at Stanford University), the University of Iowa Blommers Measurement Resources Laboratory, and the University of Chicago Presidents' Papers and Ralph W. Tyler Collection. Assistance accessing records was provided by Earl Rogers of the University of Iowa Blommers Measurement Resources Laboratory, Jill Bogard of the American Council on Education Archives, and Will Mahoney of the National Archives.

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46. E. F. Lindquist to Principals and Superintendents, 3 May 1948, p. 1, Iowa Tests of Educational Development Papers, Folder III-1948-2B, Blommers Measurement Resources Laboratory, University of Iowa, Iowa City, Iowa.

47. Ibid.

48 E. F. Lindquist, "The Iowa Tests of Educational Development. Use and Interpretation of the Test Results by the Classroom Teacher" (Iowa City: State University of Iowa, 1942).

49. Peterson, Iowa Testing Program, 57-58.

50. E. F. Lindquist, "The Use of Tests in the Accreditation of Military Experience and in the Educational Placement of War Veterans," Educational Record (October 1944): 367.

51. E. F. Lindquist, Lauren A. Van Dyke, and John R. Yale, What Good is High School? (Chicago: Science Research Associates, 1948), 34-35.

52 College Board officials were discussing how they could replace their essay exams with the Scholastic Aptitude Tests when they heard of the Japanese attack. Nicholas Lemann, The Big Test: The Secret History of the American Meritocracy (New York: Farrar, Straus and Giroux, 1999), 53-55; Claude M. Fuess, The College Board: Its First Fifty Years (New York: Columbia University Press, 1950), 147-175.

53 C.S. Boucher, "The New Articulation Plan at Chicago," Progressive Education 10 (October 1933): 381-385.

54 The concept had originated with the first president of the University of Chicago, William Rainey Haper. Harper called the credential an "associate degree." William Hainey Harper, "The Associate Degree," University Record 5 (April 6, 1900-March 29, 1901), Chicago: University of Chicago, pp. 12-13; Richard J. Storr, Harper's University: The Beginnings – A History of the University of Chicago (Chicago: The University of Chicago Press, 1966).

55. Robert M. Hutchins, "The University of Chicago and the Bachelor's Degree," Educational Record 23 (July 1942): 570-571.

56 Ibid., 571.

57. Ibid., 571, 572.

58. William Pearson Trolley, "A Counterfeit Bachelor's Degree," Educational Record 23 (July 1942): 596-597.

59. Homer P. Rainey, "The Devaluation of the Educational Currency," Educational Record 23 (July 1942): 586.

60. In 1950 the University of Chicago, finding that few high school sophomores were enrolling in college and that its "bachelor's degrees" were not accepted as representing four years of college work, returned to the traditional four-year degree program. Harold S. Wechsler, The Qualified Student: A History of Selective College Admission in America (New York: John Wiley & Sons, 1977), 232, 236 (note 52).

61. Will French, "Measures of Maturity vs. Units of Credit," National Association of Secondary-School Principals (NASSP) Bulletin 26 (March 1942): 77, 75.

62. Raymond A. Green, "War-Time Acceleration in Education," NASSP Bulletin, 27 (April 1943): 38.

63. See Paul B. Jacobson, "General Education in the Secondary School Now and After the War," NASSP Bulletin 28 (November 1944): 5-11.

64. George F. Zook, "The President's Annual Report," Educational Record 24 (July 1943): 245-247; American Council on Education, "Staff News Letter" (Chicago: Cooperative Study in General Education, 21 January 1943), Folder 2, Box 21, Entry 10, American Council on Education Archives.

65. "History of the Joint Army and Navy Committee on Welfare and Recreation," mimeographed report, Box 22, Record Group 225, National Archives, Washington, D.C.; Minutes of the Education Advisory Council of the Joint Army and Navy Committee on Welfare and Recreation, 20 May 1943, Box 52, Record Group 225, National Archives, Washington, D.C.

66. American Council on Education, "Memorandum to the Joint Army and Navy Committee on Welfare and Recreation Subcommittee on Education (6 April 1942), Foler 4, Box 20, Entry 10, ACE Archives; Francis Keppel, "Civilian Aid in the Armed Forces' Educational Program," The Journal of Educational Sociology 16 (May 1943): 534-590; Zook, "President's 1943 Report," 213-250.

67. Memorandum to Joint Army and Navy Committee on Welfare and Recreation Subcommittee on Education from Wilford M. Aikin et al (Washington, D.C.: American Council on Education, 6 April 1942), pp. 1, in Folder 4, Box 20, Entry 120, American Council on Education Archives.

68. Lily Detchen, "The U.S. Armed Forces Institute Examinations," Educational Record 28 (October 1947): 467; "Contract with the University of Chicago to Recommend, Devise, Construct, and Supply Performance Tests to Be Used by the Army Institute for the Appraisal and Determination of the Quality of the Educational Work of Military Personnel Enrolled in the Said Army Institute," May 25, 1942, "University of Chicago Presidents' Papers ca 1925-1945," Joseph Regenstein Library, University of Chicago, Chicago.

69 American Council on Education, Sound Educational Credit for Military Experience: A Recommended Program (Washington, D.C.: American Council on Education, 1943), 10-12.

70. Minutes of the Subcommittee on Education, Joint Army and Navy Committee on Welfare and Recreation, 6 August 1942, pp. 8-9, in Box 27, Record Group 225, National Archives, Washington, D.C.

71. Minutes of the Subcommittee on Education of the Joint Army and Navy Committee on Welfare and Recreation, 12 November 1942, p. 3, in Box 27, Record Group 225, National Archives, Washington, D.C.

72. W.W. Charters, "Techniques of Giving and Taking Advice: USAFI's Advisory Committee," Educational Record 28 (January 1947): 15.

73. Ibid., 16.

74. Minutes of the Advisory Committee to the Army Institute, 21 June 1942, p. 1, in Box 30, Record Group 225, National Archives, Washington, D.C.

75 Minutes of the Advisory Committee to the Army Institute, 27-28 February 1943, p.3. in USAFI Papers, Folder VI-3-1, Blommers Measurement Resources Laboratory, University of Iowa, Iowa City, Iowa.

76. Ibid.; Minutes of the Advisory Committee to the Army Institute, 27 January 1943, p. 2 in USAFI Papers, Folder VI-3-1, Blommers Measurement Resources Laboratory, University of Iowa, Iowa City, Iowa.

77. Minutes of the Advisory Committee to the Army Institute, 12-13 December 1942, USAFI Papers, Folder VI-3-1, Blommers Measurement Resources Laboratory, University of Iowa, Iowa City, Iowa. While the Navy eventually provided general education courses that did not meet immediate military needs, the Army Institute took the position that such courses should be acquired only through correspondence study programs developed at university expense. Army Institute Project Staff Meeting, 27 January 1943, USAFI Papers, Folder VI-1-F, Blommers Measurement Resources Laboratory, University of Iowa, Iowa City, Iowa.

78. Minutes of USAFI, 27-28 February 1943, p. 3.

79. American Council on Education, Sound Educational Credit, 13.

80. Minutes of the Army Institute Project Staff, 14 October 1942, p. 3, in USAFI Papers, Folder VI-1-F, Blommers Measurement Resources Laboratory, University of Iowa, Iowa City.

81. Lindquist, "Use of Tests in Accreditation," 357-376; E. F. Lindquist, "Retrospective View," 16-17.

82 Peterson, Iowa Testing Program, 77.

83. Lindquist, "Retrospective View," 16.

84. Minutes of the Special Committee of the Army Institute, 17-18 October 1942, Box 31, Record Group 225, National Archives, Washington, D.C..

85. Minutes of the Advisory Committee to the Army Institute, 4 November 1942, p.2, in USAFI Papers, Folder VI-1-F, Blommers Measurement Resources Laboratory, University of Iowa, Iowa City, Iowa. Lindquist acknowledged, "I began that program by lifting five tests out of our ITED battery and restandardizing them under military auspices on a nation-wide basis." William J. Feister and Douglas R. Whitney, "An Interview with Dr. E. F. Lindquist," Epsilon Bulletin 42 (1968): 24.

86. Minutes of Special Committee to the Army Institute, 17-18 October 1942, p. 3.

87. Lindquist, "Retrospective View," 16.

88. Minutes of Army Institute Project Staff, 14 October 1942, pp. 1-2.

89. American Council on Education, Sound Educational Credit, 12-13.

90 Ibid., 25-29.

91. Ibid., 3; Zook, "President's 1943 Report," 213-250.

92. Ripley S. Sims, "A Chronology of Selected Events in the History of the United States Armed Forces Institute," unpublished paper, [1974].

93. George F. Zook, "The President's Annual Report," Educational Record 27 (July 1946): 235-237.

94. Lindquist recommended leasing, rather than selling, the test booklets to schools so that sufficient profits could be generated to support future test production. The American Council on Education agreed to give the Army Institute final say over this proposal since "the full cost of test production had already been borne by the Army" and the Army Institute apparently rejected the proposal. Minutes of the Committee on Measurement and Guidance, New York City, 13 October 1943, Folder 5, Box 26, Entry 10, American Council on Education Archives.

95. George P. Tuttle, Guide to the Evaluation of Educational Experiences in the Armed Services (Washington, D.C.: American Council on Education, 1944).

96. George F. Zook, "The President's Annual Report," Educational Review 30 (July 1947): 267; Zook, "1946 Report," 259.

97. George F. Zook, "The President's Annual Report," Educational Record 25 (July 1944): 205.

98. Minutes of the Advisory Committee to the United States Armed Forces Institute, 12-13 January 1946, USAFI Papers, Folder VI-3-1, Bloomers Measurement Resources Laboratory, University of Iowa, Iowa City, Iowa.

99. Zook, "President's 1946 Report," 260.

100. Ibid., 260-261.

101. Keith W. Olson, The G.I. Bill, the Veterans, and the Colleges. (Lexington: The University Press of Kentucky, 1974), pp. 1-24, 43-44, 75.

102 "The GED Test and College Entrance Requirements," NASSP Bulletin 32 (October 1948): 42-44.

103. E. E. Milligan, L. Joseph Lins, and Kenneth Little, "The Success of Non-High-School Graduates in Degree Programs at the University of Wisconsin," School and Society 67, (10 January 1948): 27-29.

104 Richard A. Mumma, "The College Record of Students Admitted on the Basis of G.E.D. Tests," College and University 26 (October 1950): 79-86.

105. Byron H. Atkinson, "Veteran Vs. Non-Veteran Performance at U.C.L.A.: The G.I. Bill as an Academic Experiment," Journal of Educational Research 43 (December 1949): 302.

106. Louis M. Hansen and Donald G. Paterson, "Scholastic Achievement of Veterans," School and Society 69 (12 March 1949): 195-197.

107. The veterans more often had fathers with lower occupational positions, who had not attended college, were foreign born, or had more children. Edward L. Clark, "The Veteran as a College Freshman," School and Society 66 (13 September 1947): 206.

108. Arthur M. Gowan, "Characteristics of Freshman Veterans," Journal of Higher Education 20 (April 1949): 205-206.

109. Robert H. Shaffer, "A Note on the Alleged Scholastic Superiority of Veterans," School and Society 67 (13 March 1948): 205. See also, Morris Tepping, "Scholastic Achievements of Veterans and Nonveterans at the University of Colorado Extension Center in Denver," School and Society 68 (4 December 1948): 390-394.

110. Louis A. D'Amico, "The Comparative Achievement of Veterans Admitted to Indiana University on the Basis of General Educational Development Tests and a Selected Group of Other Indiana University Students" (Ph.D. diss., Indiana University, 1953).

111. Norman Frederiksen and William B. Schrader, Adjustment to College: A Study of 10,000 Veteran and Nonveteran Students in Sixteen American Colleges (Princeton, NJ: Educational Testing Service, 1951), cited in Olson, The G.I. Bill, 54.

112. Edward C. Roeber, "The G.E.D. Tests as a Measure of College Aptitude," Educational Research Bulletin 29 (15 February 1950): 41, 55.

113. George F. Zook, "The President's Annual Report," Educational Record 29 (July 1948): 241.

114. U.S. Office of Education War-Time Commission, "War-Time Acceleration of Secondary-School Pupils," National Association of Secondary-School Principals (NASSP) Bulletin 26 (February 1942): 29-32.

115. Paul E. Elicker, "Secondary-School Credit for Military Experience: An Abstract of a Committee Recommendation for Secondary Schools," NASSP Bulletin 27 (October 1943): 9-10.

116. William C. Hill, "Should Secondary Schools Accelerate Their Programs?" NASSP Bulletin 27 (March 1943): 40.

117. Ralph W. Tyler, "A Summary of the Findings of the Fact-Finding Study of the Testing Program of the United States Armed Forces Institute," (Chicago: University of Chicago, [1954]), 3.

118. American Council on Education, Sound Educational Credit, 21.

119. Tyler, "Summary of Fact-Finding Study," 3.

120. Samuel A. Lynde, "Schooling for the Under-Educated Veteran," NASSP Bulletin 29 (March 1945): 14.

121. Minutes of Advisory Committee to USAFI, 27-28 February 1943.

122. United States Armed Forces Institute, Examiner's Manual: Nature and Purpose of the Tests, Norms for Interpretation of Test Results, Directions for Administering and Scoring the Tests (Washington, D.C.: American Council on Education, 1944).

123. Ibid., 10-14.

124. United States Armed Forces Institute, Examiner's Manual, 1944; "Tables for Converting Raw Scores to Standard," Form B (Civilian), mimeographed, n.d., USAFI Papers, Folder VI-2-D, Blommers Measurement Resources Laboratory, University of Iowa, Iowa City, Iowa.

125. Herbert S. Conrad, "Tests of General Educational Development" in The Third Mental Measurement Yearbook, ed. Oscar Krisen Buros (Highland Park, N.J.: The Gryphon Press, 1949), 41.

126. Lindquist, "Use of Tests in Accreditation," 366.

127. Ibid., 359.

128. Lindquist provided ITED test scores comparable to the norms recommended for passing the GED test battery to the coordinator of the Veterans School in Dubuque. E. F. Lindquist to Max V. Warner, 18 May 1946, USAFI Papers, Folder VI-3-4, Blommers Measurement Resources Laboratory, University of Iowa, Iowa City, Iowa; norming tables in College of Education, "Grade-Percentile Norms for the Iowa Tests of Educational Development," 1943, in Iowa Tests of Educational Development Papers, Folder ITED-1943-3B, Blommers Measurement Resources Laboratory, University of Iowa, Iowa City, Iowa.

129. Lindquist, "Use of Tests in Accreditation," 357-376; American Council on Education, Sound Educational Credit.

130. Detchen, “U.S. Armed Forces Institute Examination,” 471; Letter of Colonel Francis T. Spaulding to High School Principals, 2 February 1943, USAFI Papers, Folder VI-2-C, Blommers Measurement Resources Laboratory, University of Iowa, Iowa City, Iowa.; American Council on Education Veterans Testing Service, Agents' Handbook (Washington, D.C.: American Council on Education, March 1947), 6; Benjamin S. Bloom and Charles R. Statler, "Changes in the States on the Tests of General Educational Development from 1943 to 1955," The School Review (Summer 1957): 204-221. The norms and equivalence tables published by USAFI for the GED test also specify that "in every school only one test was administered." United States Armed Forces Institute, "Tests of General Educational Development Norms and Equivalence Tables," undated, in Box 31, Record Group 225, National Archives, Washington, D.C..

131. Paul L. Dressel and John Schmid, An Evaluation of the Tests of General Educational Development (Washington, D.C.: American Council on Education, 1951), 5-6.

132. Ibid., 6.

133. Nearly all of the veterans tested were former students at Chicago public high schools, although a few had only completed elementary school. Max D. Engelhart, “A Report on GED Testing,” mimeographed (Chicago: Veterans Testing Service Chicago Public Schools, n.d.), USAFI Papers, Folder VI-3-4, Blommers Measurement Resources Laboratory, University of Iowa, Iowa City, Iowa. The American Council on Education recommended that veterans who failed one or more of the subtests could still earn the equivalency diploma if the sum of their standard scores on the five tests was at least 225, but this option was seldom exercised. Eighty-three percent of the veterans tested earned a minimum standard score of 35 on all five subtests; less than 4 percent failed one of the subtests but passed by earning a 225 total score.

134. David H. Dingilian, "An Approach to Social Technology," Journal of the American Association of Collegiate Registrars (July 1947): 432-441 cited in Dressel and Schmid, Evaluation, 22.

135. Dressel and Schmid, Evaluation, 2-3, 23.

136. James N. Mosel, "The General Educational Development Tests (High School Level) as a Predictor of Educational Level and Mental Ability," Journal of Educational Research 48 (October 1954): 133.

137. Minutes of the Second Meeting of the Commission on Accreditation of Service Experiences, Washington, D.C., 6 April 1946, Folder 4, Box 33, Entry 10, American Council on Education Archives.

138. Walter E. Hess, "State Requirements for a High School Diploma for the Veteran," NASSP Bulletin 30 (October 1946): 102.

139 Two states required veterans to pass all five tests at the thirty-five minimum with no exceptions for applicants who failed one of the subtests, and Maryland required applicants to score at the fiftieth percentile on all five tests.

140. At least other three states had issued high school equivalency certificates based on comprehensive exams predating the GED: Connecticut since 1935, New Hampshire since 1937 and Maryland since 1941. Walter E. Hess, "State Requirements for a High School Diploma for the Veteran," NASSP Bulletin 30 (March 1946): 55-108.

141. Conrad, "Tests of General Educational Development," 36.

142. Ibid.

143 Zook, “President’s 1948 Report,” 258.

144 Memorandum of Thomas N. Barrows to George F. Zook, 24 May 1948, p. 3, in Folder 7, Box 43, Entry 10, American Council on Education Archives; Zook, "President's 1948 Report," 251; George F. Zook, "The President's Annual Report," Educational Record 30 (July 1949): 281-286.

145 George F. Zook, "The President's Annual Report," Educational Record 31 (July 1950): 252.

146 Zook, “President’s 1948 Report,” 258-260.

147 Zook, "President's 1947 Report," 268.

148. Hess, "How Veterans and Nonveterans Obtain Certification."

149. Lagermann, Private Power for Public Good, 108-121.

150. Zook, "President's 1948 Report,” 234-243.

151. George F. Zook, "The President's Annual Report," Educational Record 30 (July 1949): 281-286.

152. Commission on Accreditation of Service Experiences, Accreditation Policies of State Departments of Education for the Evaluation of Educational Experiences of Military Personnel (Washington, D.C.: American Council on Education, January 1954.

153 Dressel and Schmid, Evaluation, 46-47.

154. Ibid., 50.

155. Ralph W. Tyler, "Summary of Fact-Finding Study, 28-29.

156.United States Armed Forces Institute, Examiner's Manual, 10-14.

157 Benjamin S. Bloom and Charles R. Statler, "Changes in the States on the Tests of General Educational Development from 1943 to 1955, " School Review 65 (Summer 1957): 204-221.

158. Committee on Evaluation of the Tyler Fact-Finding Study, Recommendations on A Study of the General Educational Development Testing Program (Washington, D.C.: American Council on Education, 1956), 7.

159. Tyler, "Summary of Fact-Finding Study," 56-57.

160. Ibid., pp. 12, 14, 15.

161. Committee on Evaluation of the Tyler Fact-Finding Study, Recommendations, ix.

162. Ibid., 30-31.

163. American Council on Education, "Second Meeting of the Committee on Evaluation of the Tyler Fact-Finding Study," 19 October 1955, Folder 12, Box 60, Entry 14, American Council on Education Archives.

164. Committee on Evaluation of the Tyler Fact-Finding Study, Recommendations, x.

165. Ibid., xi.

166. Ibid., 31.

167. Dressel and Schmid, Evaluation, 12-13.

168. Tyler, "Summary of Fact-Finding Study," 31. In 1961 the American Council on Education discontinued distribution of the college-level batteries of the GED tests. Office on Educational Credit and Credentials, Guide to Credit by Examination (Washington, D.C.: American Council on Education, 1981), 87.

169. American Council on Education, "Minutes of the Twenty-Second Meeting of the Commission on the Accreditation of Service Experiences, Washington, D.C., 19 May 1958," Folder 2, Box 104, Entry 14, American Council on Education Archives.

170. "Extracted from DD Negotiated Contract, Order No. IE-47-043-389-57, to the Bursar, The University of Chicago, 6 December 1956," attachment to the American Council on Education, "Minutes of Twenty-Second Meeting of Commission on the Accreditation of Service Experiences."

171. Benjamin Bloom, "Proposal to the United States Armed Forces Institute for Research on the Application of Sequential Item Forms to the Tests of General Educational Development," p. 1, attachment to the "Minutes of Twenty-Second Meeting of Commission on the Accreditation of Service Experiences."

172. Ibid.

173. "Memorandum of Cornelius P. Turner to Dr. Arthur S. Adams, December 9, 1957," Folder 2, Box 84, Entry 14, American Council on Education; B.S. Bloom, "The 1955 Normative Study of the Tests of General Educational Development," School Review 64 (March 1956): 110-24; Bloom and Statler, "Changes in the States."

174. “Memo of Turner to Adams;” "Memorandum from Lt. Col. H.U. Bookhart to Director of the U.S. Armed Forces Institute," 7 August 1958, p. 2 and "Memorandum on Actions on Motions Passed by the Commission on Accreditation of Service Experiences, May 19, 1958 Meeting," both in Folder 3, Box 104, Entry 14, American Council on Education Archives.

175. "Memorandum on Actions on Motions Passed." May 1953.

176 General Educational Development Testing Service, The GED Statistical Report (Washington, D.C.: American Council on Education, 1978), 16.

177. Bloom and Statler, "Changes in the States," 215.

178. Stewart, "GED: Fifty Years," 19.

179. Congress, Senate, Committee on Veterans Affairs, Final Report on Educational Assistance to Veterans: A Comparative Study of Three G.I. Bills, reported prepared by the Educational Testing Service, 93d Cong., 1st sess., 1973, Committee Print 18, pp. 60, 161. About 1.1 million veterans (21 percent) of the Korean Conflict attended college under the G.I. Bill and 815,000 (15 percent) attended schools below college.

180. Kempfer and Wright, 100 Evening Schools; U.S. Office of Education Biennial Surveys (Washington, D.C.: U.S. Office of Education, 1944-46 - 1955-56). The number of adult schools operated by public school systems in cities of 2,500 population peaked at 947 in 1951-52 and dropped to 674 by 1955-56. By 1959-60 community college expenditures for elementary and secondary education had passed adult education spending by local public schools. U.S. Office of Education, Biennial Surveys, 1944-46 to 1955-56 (Washington, D.C.: Office of Education, biennial); National Center for Education Statistics, Digest of Education Statistics: 1992 (Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement, 1992), 156.

181. Robert G. Vanderlip, "Washington's High School Center for Veterans," NASSP Bulletin 29 (December 1945): 81; Earl L. Bedell, "The Veterans Education Program in the Detroit Public Schools," NASSP Bulletin 29 (December 1945): 74-80.

182. John A. Ramseyer, "Ex-GI's Will Continue High School Education," NASSP Bulletin 29 (December 1945): 83.

183. Tyler, "Summary of Fact-Finding Study," 58.

184. Ibid., 70-71.

185. General Educational Development Testing Service, The GED Statistical Report (Washington, D.C.: American Council on Education, 1977), 16.

186. U.S. Congress, House, Committee on Education and Labor, A Report on the Education Amendments of 1978, H.R. 15 Together with Additional and Supplemental Views, 95th Cong., 2d sess., 1978, H. Rept. 95-1137, p. 127.

187. Ibid., 129.

188. Sar Levitan and Benjamin H. Johnston, The Job Corps: A Social Experiment That Works (Baltimore: Johns Hopkins University Press, 1975), 61-62; U.S. Department of Labor and Department of Health, Education, and Welfare, Employment and Training Report of the President (Washington, D.C.: U.S. Government Printing Office, 1979), 182.

189. Levitan and Johnston, Job Corps, 62.

190. Auerbach Associates, An Impact Evaluation of the Work Incentive Program. Department of Labor Contract #55-40-69-02, September 15, 1972, pp. 6-8, cited by Jesse E. Gordon, "WIN Research: A Review of the Findings," in The Work Experience, eds. Charles D. Garvin et al (New York: Universe Books, 1978), 35.

191. "Report of the Auerbach Corporation on the Work Incentive Program," in Congress, Senate, Committee on Finance, Reports on the Work Incentive Program. Prepared by the Department of Labor and the Department of Health, Education, and Welfare 91st Cong., 2d sess., 1972, Committee Print, p. 318.

192. Gordon, "WIN Research," 55.

193. A study conducted by CTB/McGraw Hill and included in the 1976 edition of the Test of Adult Basic Education bears this out. The study obtained GED test scores and TABE battery scores for 359 students in adult education programs at twenty-one centers in eleven states. Of students with TABE grade level equivalents of 8.6 to 10.0, eighty-one percent passed the GED tests, whereas of students with 7.3 to 8.5 grade equivalent scores, only fifty-six percent passed. Students scoring on the TABE in the 5.9 to 7.2 grade level equivalents had only a twenty-three percent success rate on the GED tests. CTB/McGraw-Hill, TABE Tests of Adult Basic Education. Technical Report. 1976 Edition. (Monterey, Calif.: CTB/McGraw-Hill, 1976), 17-19; CTB/McGraw-Hill, TABE Tests of Adult Basic Education. Examiner's Manual. 1976 Edition. (Monterey, Calif.: CTB/McGraw-Hill, 1976), 50-51.

194. See Walter J. Musgrove, "How Useful Are the Official Practice GED Tests and General Educational Performance Index for Predicting Performance on the GED Tests?" GED Research Brief No. 3 (March 1981).

195. Douglas R. Whitney to Beret Harmon, 16 October 1985, p.1, correspondence on file with author.

196. Educational Testing Service, The Final Report for a Project to Develop Twelve New Forms of the Tests of General Educational Development and to Standardize the Tests Nationally in the United States (Princeton, N.J.: Educational Testing Service, February 1978), 12-13.

197. Ibid., 3; Educational Testing Service, "GED Research Project." (Princeton, N.J.: Educational Testing Service, 22 April 1974), 12.

198. ETS, "GED Research Project," 12.

199. Ibid., 13.

200. Office on Educational Credit GED Testing Service, "Specifications for the Development of Tests of General Educational Development (GED)" (Washington, D.C.: American Council on Education, September, 1974), 8.

201. ETS, "GED Research Project," 14.

202. Educational Testing Service, "GED Research Project," 18.

203. Frances Swineford, "Test Analysis, Tests of General Educational Development, ZGE1"
(Princeton, N.J.: Educational Testing Service, 1978).

204. Pass rates are calculated on requirements that candidates earn a minimum standard score of 35 on each subtest or a total score of 225 on all five tests. Pass rates based on requiring minimum subtest scores of 35 and a total score of 225, were 42 percent for ninth graders, 57 percent for tenth graders, 66 percent for eleventh graders and 68 percent for twelfth graders. F. Reid Creech, "The Spring 1977 Norming of the Tests of General Educational Development (GED)" (Princeton, N.J.: Educational Testing Service, 1978), 57. These data are based on very small samples of high school students. Only 210 or less ninth graders were given the five GED subtests for the study. Swineford, "Test Analysis, pp. 1, L.

205. Educational Testing Service, Final Report, p. 14.

206 Henry A. Spille, "The 1980 Norming of the GED Tests," GED Testing Service Memorandum #15 (July 1981), 6-8.

207. Henry A. Spille, "New Time Limits for Tests 1 and 5," GED Testing Service Memorandum #13 (June 1981), 3; Spille, "1980 Norming," 3.

208. Spille, "New Time Limits," 5.

209. At the Milwaukee testing site students passing with a forty-five standard score rose from twenty-six percent to forty-seven percent on the writing subtest when the time limits were lifted and from forty percent to sixty-eight percent on the math subtest. Marvin E. Ketterling, "GED Tests and Time Limits," The Adult Learner 5 (September 1980). The GED Testing Service did not provide data on differences in pass rates for the full Wisconsin Timing Study. Douglas R. Whitney and Wayne M Patience, "Work Rates on the GED Tests: Relationships With Examinee Age and Test Time Limits" (Washington, D.C.: American Council on Education, September 1981).

210. Whitney to Harmon, 16 October 1985. According to Henry Spille, the decision to eliminate the age requirement was based on legal concerns that the ACE minimum age policy violated the federal Age Discrimination Act of 1975. Henry A. Spille to author, 9 December 1994.

211. GED Testing Service Office on Educational Credit, "Specifications," 9.

212. Benjamin Allan Quigley, "The Canadianization of the GED: The History and Development of the General Educational Development Testing Program in Canada" (Washington, D.C.: American Council on Education, January 1987).

213 American Council on Education, The Tests of General Educational Development Technical Manual (Washington, D.C.: author, 1993), pp. 70-73; GED 1994 Statistical Report, 18-19.

214 National Commission on Excellence in Education, A Nation at Risk: The Imperative of Educational Reform (Washington, D.C.: U.S. Government Printing Office, April 1983).

215 Henry A. Spille, , "GED Testing Service (GEDTS) Response to the Recommendations and Implementing Recommendations Made in the Report, A Nation at Risk," GED Testing Service Memorandum No. 32 (Washington, D.C.: American Council on Education, March 1984), p.1.

216. Ibid., 5.

217. Ibid.

218. Ibid., 4; National Commission on Excellence in Education, Nation at Risk, 27.

219. Spille, "Response," 1.

220. Hank Spille, "Awarding Carnegie Units on the Basis of GED Test Results," GED Testing Services Memorandum #9 (Washington, D.C.: American Council on Education, September 1980), 3. Spille warned against granting Carnegie unit credits for high school courses such as U.S. history, algebra or chemistry on the basis of GED test scores. As an example, he noted that "an examinee could answer every U.S. History question incorrectly and still achieve a [passing] standard score of 45 on the Social Studies Test." Ibid., 1.

221. Henry A. Spille, "Towards Universal Acceptance of the GED Credential," GED Items 2 (October 1985): 3.

222. Ibid., 3, 10.

223. U.S. Department of Education, Digest of Education Statistics. 1987 (Washington, D.C.: U.S. Government Printing Office, 1987), pp.102-105.

224. "Don't Hurry to Take the GED Tests!" GED Items 2 (October 1985), 8.

225. Richard Swartz et al, The Official Teacher's Guide to the Tests of General Educational Development (Washington, D.C.: American Council on Education, 1987), 129-130.

226. American Council on Education, Technical Manual, p. 4.

227. Richard Swartz and Douglas R. Whitney, The Relationship Between Scores on the GED Writing Skills Test and on Direct Measures of Writing. GED Testing Service Research Studies, No. 6 (Washington, D.C.: American Council on Education, June 1985), 6.

228. Richard Swartz, Wayne Patience and Douglas R. Whitney, Adding an Essay to the GED Writing Skills Test: Reliability and Validity Issues (Washington, D.C.: American Council on Education, July 1985), 10; Myra Baum, The Cambridge Program for the New York State GED Writing Sample (New York: Cambridge, 1986).

229. American Council on Education, Technical Manual, 111.

230 Geoff Martz, The Princeton Review: Cracking the GED (New York: Villard Books, 1993), 160.

231. In 1980 ACE reported the median time spent preparing for the GED exams; in 1989 ACE reported the mean time spent preparing. Janet Baldwin, "GED Candidates: A Decade of Change," GED Profiles: Adults in Transition (Washington, D.C.: American Council on Education, September 1990); Andrew G. Malizio and Douglas R. Whitney, Who Takes the GED Tests? A National Survey of Spring 1980 Examinees (Washington, D.C.: American Council on Education, March 1981), pp. vi, 10-11.

232. GED 1994 Statistical Report, 32.

233. Wisconsin 1993 Norming Study, 11; GED Testing Service, Examiner's Manual. Tests of General Educational Development. January 1988 Edition (Washington, D.C.: American Council on Education, 1988), 3-10. In 1980 of a reported 3,600 high school seniors tested, only 750 appear to have been asked to take all five subtests and only 686 of these students actually completed the five-test battery. Henry A. Spille, "Interpreting GED Test Results," Memorandum #21, General Educational Development Testing Service, October 1981.

234. U.S. Department of Education, National Center for Education Statistics, The Condition of Education, 1994 (Washington, D.C.: U.S. Government Printing Office, 1994), 66-67, 230-235. The National Adult Literacy Survey collected data only on each person's highest level of education completed. Consequently, the literacy scores of GED holders could not be compared with the total population of four-year high school graduates.

235. Geoff Martz, The Princeton Review: Cracking the GED, (New York: Villard Books, 2000), 63, 154, 191, 247, 293, 329.

236 Ibid., p. 154??

237 Ibid., p. 191??

238 Ibid., p. ??

239 Most of the problems in the portion of the test using a calculator require simply arithmetic calculation, easily completed without a calculator. The calculator does appear to make decimal and percentage problems easier to solve for persons who have trouble determining placement of decimal points. See the "Official GED Practice Tests" for the 2002 Series, developed by the GED Testing Service and distributed by Steck-Vaughn Company.

240 As of August 2002, the report on the norming study had not yet been released. Interview with Lyn Schaefer, 6 August 2002.

241. GED Items 4 (September/October 1987): 4.

242. "The 18th Annual GED Conference," GED Items 6 (September/October 1989): 6.

243 1999 GED Statistical Report, 22-23.

244. In 1990 the Council informed college admissions officers that they should consider a total GED score of 265 to be the equivalent of high school graduates in the top 40 percent of their senior class, a score of 285 equivalent to graduates in the top 25 percent, a score of 310 equivalent to graduates in the top 10 percent, and a score of 320 equivalent to graduates in the top 5 percent of their senior class. "Admissions and Scholarships for GED Graduates: Guidelines for Interpreting GED Scores," GED Items 6 (November/December 1990), 4-5.

245. Mark Dynarski, "Analysis of Factors Related to Default," Mathematica Policy Research, Inc., for the U.S. Department of Education, April 1991; "ED Plans Tighter Rules for Aid to Dropouts" School-to-Work Report 4 (December 1995): 94.

246. Chris A. McKenna, "NYC Schools Raise Math, Science Standards for All Students," Employment and Training Reporter 26 (7 September 1994): 13.

247. In a four year period the number of students in the system's GED program more than doubled, from 6,000 to 15,000. Michel Marriott, "Value of G.E.D. Diplomas to High School Dropouts Questioned," New York Times, 15 June 1993, p. 18(A).

248. Teenagers attending 17 out of 20 days of high school classes per month were sanctioned (i.e., lost $62 of their AFDC benefits) while teens attending 8 hours of GED instruction a month received a $62 bonus payment. Ohio Department of Human Services, "Project Learn Rules Booklet: Questions and Answers" (April 1989), 1; Dan Bloom et al, LEAP: Implementing a Welfare Initiative to Improve School Attendance Among Teenage Parents (New York: Manpower Demonstration Research Corporation, July 1991), 58, 72.

249 National Education Goals Panel, Data for the National Education Goals Report. Volume One: National Data (Washington, D.C.: U.S. Government Printing Office, 1994), 14.

250. Ibid., 133, 145; GED Testing Service, Who Took the GED? The GED 1994 Annual Statistical Report (Washington, D.C., 1995), 23.

251 Robert C. McKean, "Honoring Veterans of World War II" (Boston: Department of Veterans Services) at www.state.ma.us/veterans/operationrecognition.htm; "Operation Recognition" at www.wwiimemorial.com/Education/operation_recognition.htm, accessed July 25, 2002.

252. Ralph W. Tyler, Perspectives on American Education: Reflections on the Past…Challenges for the Future (Chicago: Science Research Associates, Inc., 1976), 31.

253. Ibid.