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Colleges and Universities
in WWII

Impact of the War on Higher Education

Many would have argued before the war that colleges and universities were adaptable and would have no difficulty adjusting to wartime needs; few, however, would have anticipated the extent of their elasticity. Colleges and universities demonstrated their ability to survive; several came close to bankruptcy during the war but few succumbed. Thanks to the college training programs conducted by the Army, Navy, and Army Air Forces, hundreds of institutions that would otherwise have faced much more severe financial difficulty survived, albeit often not without stress, and all but a few of those that did not participate — almost two-thirds of the total — managed to survive to the war's end, after which the deluge of veterans enrolling put new life into them.

The war had significant impact on colleges and universities, the effects of which, in different ways, continued to be felt for years afterward. In addition to the direct impact of the wartime experience, many changes introduced later, though not always linked directly to a particular wartime development, were due indirectly to experiences in World War II.

The war affected the financial condition of institutions immensely, but it also influenced certain academic concepts, the aims of education, the introduction of new programs and curricula, the measurement of learning, the nature of teaching, administration, and changes in the campus culture. It led to changes in the ways students were treated, in services to students, and who should go to college. The tempo of wartime on college campuses led to the disappearance of nine-month teaching schedules and the leisurely lifestyle of prewar days, a change that became permanent at many institutions and for some faculty a

virtually all institutions. The shift in enrollment from the humanities and social sciences to engineering, business administration, and other applied studies that had begun during and immediately following World War I grew. However, the immediate outcome for many institutions, more than any other, was simply staying alive, of keeping the institution's doors open.

FINANCES

When college and university presidents recommended during their Baltimore meeting in January 1942 that the federal government subsidize colleges and universities in wartime, they anticipated the effect of enrollment decline on institutional finances. Many of them remembered World War I and its financial impact on colleges, even though America's role in that war was short-lived. Just about everyone predicted that America would be involved in this war much longer.

Colleges and universities struggled with budgets throughout the war. Even those that had large government training and/or research contracts often found it necessary to trim expenditures sharply; however, predictably, it was the small underfunded colleges that suffered most. A survey of 77 liberal arts colleges in the spring of 1945 revealed that their faculties were depleted, course offerings had been slashed, extracurricular activities were sharply reduced or abandoned, and buildings and campus maintenance deteriorated. It was not only private institutions that were under stress; state institutions appealed to legislatures for additional funding to offset inflation, but with declining enrollment of civilian students, institutions did not have a strong case and legislatures were not inclined to increase appropriations.

Loss of enrollment and tuition income was felt most acutely in private men's colleges with small endowments, but even those with healthy endowments found it necessary to search for economies. For example, a study of 31 private men's colleges, of which 25 had military training contracts at some time during the war, showed that between 1939-1940 and 1944-1945 enrollment declined 78.7 percent, and income dropped from \$16 million to \$12.7 million. The loss would have been greater were it not for the fact that most of them had better than average endowments, which benefited from higher wartime dividends, along with increased giving as a result of higher profits in manufacturing. When adjusted for inflation, however, the result was still a serious decline in operating funds.

Another study of the finances of 49 four-year men's colleges late in the war showed that only 12 had balanced budgets; 37 had operating deficits, of which two-thirds had a shortfall of ten percent or more. These, too, were the better-off institutions with healthier endowments than the majority of private colleges, better able to stand loss of tuition income. It does not require much imagination

to understand the situation faced by the large majority of private institutions, the small, impoverished colleges that relied largely on tuition for survival. Without military contracts, many of the colleges would have been faced with catastrophe. For example, for Hobart College, a men's college in Geneva, New York, with only 50 civilian students in the autumn term 1943, the 393 Navy V-12 students who had arrived that summer were a godsend financially. Rose Polytechnic, a small men's college in Indiana, barely managed to hang on until the end of the war, even though it had military programs on campus.

Yet, some small colleges fared quite well, thanks to military contracts. For example, Wabash College in Indiana collected \$135,548 in civilian tuition between 1942 and 1946, but during the same period, it received \$195,838 from the Navy in tuition fees, minuscule compared to budgets a half century later but significant income at that time. In addition, Wabash benefited from substantial gifts and profits from securities, thanks to the boom in war industries. DePauw University, affiliated with the Methodist church, reported that with income from Navy V-5 and V-12 training programs, it managed to stay in the black financially throughout the war and did not find it necessary to dismiss faculty or staff. As at most institutions, a number of DePauw faculty and staff resigned or took leaves of absence for the duration of the war to serve in the armed forces, the government, or in war industries, which reduced the institution's financial requirements (Cavness, 1961).

In spite of sharp losses in enrollment and tuition income, some co-education institutions, particularly those with state support, also suffered less. A study of 45 co-education colleges, all of which had wartime military training units, found that the decline in enrollment resulted in less than average financial loss. Civilian enrollment declined during that period by 48 percent but income by only 3.8 percent; however, when adjusted for five years of wartime inflation, even some of those institutions faced financial stress.

Only a small number of teachers colleges and normal schools — just over 40 — participated in college training programs, and although some of them fared well, as a group they experienced financial stress. In the autumn term 1943, the budgets of 148 teachers colleges, as a group, had increased by \$6.5 million; however, \$8.5 million of their budgets came from federally funded war training programs; income from student fees had declined \$2 million — a trifle 50 years later but significant at that time — and state appropriations were essentially unchanged. Since the military programs were funded on a cost basis, this still left the colleges with reduced budgets for civilian operations. In spite of price controls, the economy suffered from growing inflation, which drove up expenses significantly; this, along with competition for employees from defense industries, placed the colleges at a severe disadvantage.

Capital expenditures were virtually halted on most campuses during the war not only because of lack of money but due to unavailability of materials, shortage of labor, and in recognition of the need to conserve resources. Some

130 teachers colleges reported that between 1941 and 1943, they had reduced expenditures for construction and capital equipment by 70 percent, and 17 other teachers colleges reported that they had reduced expenditures for equipment purchases 60 percent, in addition to athletics by 98 percent, instructional salaries 14 percent, and library purchases 21 percent.

Although it was government policy that no profit be involved in training, research and other programs conducted on college and university campuses, there were isolated cases of substantial profits. In some cases, however, colleges ended up with significant losses. Anticipating that the military trainees would be at the colleges longer than in fact they were, some colleges undertook renovation and remodeling of facilities for which they were not reimbursed or were inadequately reimbursed. Some institutional administrations assumed that long-term income would equal the expenditures; others thought they had contracts with the Army or Navy that would reimburse costs of remodeling, but discovered that they did not or that the military assessed the costs at less than college administrators claimed. The Army and Navy alleged that, in some cases, college administrators attempted to enhance the net worth of their physical plants at the expense of the government.

The departure of ASTP and AAFTP trainees in the spring and summer of 1944 and the downsizing of V-12 units later wrought dramatic consequences for the finances of many institutions. It affected most the ones that could bear the loss least, the private liberal arts colleges. Those with medical, dental, and engineering trainees were affected less. When ASTP trainees left Niagara University, a men's college, enrollment dropped from 1,483 to 200 (100 full-time and 100 part-time students) giving the institution a budgetary crisis. At Syracuse University, a private university with only a modest endowment at that time, whose combined ASTP and AAFTP enrollment was among the largest in the country, the loss of all Air Corps trainees and the large majority of the ASTP trainees presented serious problems and required significant belt tightening. Although the impact varied among different types and sizes of institutions, the overall impact was serious. A survey of 216 colleges and universities discovered that the loss of federal funds for Army and Navy training averaged 61.5 percent between 1943-1944 and 1944-1945.

By the autumn of 1944, there were 1,685 institutions of higher education registered with the U.S. Office of Education, compared to 1,756 in the autumn of 1941. In the three-year period, 133 disappeared from the list, and 62 were added for a net loss of 71; however, not all of the 133 closed. Several had merged with other, usually larger, colleges or universities. The number of colleges that closed did not fully reflect the decimation visited upon many colleges, especially smaller ones.

In June 1944, the U.S. House of Representatives became concerned about the declining condition of colleges and universities, and authorized its Committee on Education under the chairmanship of Representative Graham

Barden of North Carolina to undertake a study of the effect of the reduction in military training programs on the finances and facilities of colleges and universities. Congress recognized that it would be folly to allow colleges and universities that would be needed when the war ended to close permanently or to be damaged.

The study staff, which was directed by Dr. Francis J. Brown, on loan from the American Council on Education, began with a survey in late August 1944 of all college and university presidents, of whom 1,226 responded. This was followed by small conferences for presidents held throughout the country, widely distributed by geographic area. Then, a follow-up mail survey was conducted in December to update data.

The investigation produced abundant data about the financial problems of institutions of higher education, confirming what many college presidents knew, that with three-fourths of their male students in the military services, many colleges and universities faced collapse. The enrollment of civilian students in 1944-1945 had declined to 64 percent of 1939-1940 enrollment. During 1943-1944, military contracts accounted for half or more of the income of some men's colleges and a substantial percentage at co-ed colleges. Facilities repair was delayed, part-time faculty replaced full-time teachers who had gone into the military service, and every effort was made to keep campuses going with the reduced income available.

As the war came to a close, most colleges and universities, excluding those state institutions that were forbidden by state law to use deficit financing, were faced with large indebtedness. Fortunately, war veterans, who enrolled in far greater numbers than almost anyone had anticipated, were provided financial support for their education by the Veterans Administration — munificent by prewar standards — which made it possible for most institutions to recover their financial health rapidly.

ACADEMIC FREEDOM

During World War I, academic freedom suffered gross violations in the academy. Professors of German language and literature were harassed and, in a few cases, dismissed. A professor at Columbia University who wrote a public letter encouraging young men to refuse to serve in the Army was dismissed, with the endorsement of the American Association of University Professors. Many other professors suffered for their unpopular views about the war.

It was with this in mind that the American Council on Education inserted into its report at the January 1942 meeting in Baltimore a recommendation that the excesses of World War I be avoided; by and large, they were. To be sure, patriotism was as vigorous in World War II as in World War I. Songs such as *Der Fuhrer's Face*, which ridiculed Hitler, were very popular. Admiral William

F. "Bull" Halsey's promise to ride Emperor Hirohito's white horse through downtown Tokyo stirred patriotic zeal.

However, except for internment of Japanese and Japanese Americans, a brief threat to cut down the Japanese cherry trees in Washington, and a few other incidents, excesses were in no way comparable to those of World War I, particularly on college campuses. There were no reported cases of refusal to teach the German, Italian, or Japanese language, no burning of German language books or books by German authors at July 4 celebrations, nor widespread mistreatment of foreigners. Some German-Americans in Pennsylvania went through a period of referring to themselves as *Deutsche*, which sounded much like Dutch. To be sure, there were isolated incidents of persecution of German and Italian Americans, but nothing approaching the extremes of World War I treatment of German-Americans.

Although students in college were as jingoistic as the society as a whole, if not more so, the denial of academic freedom and civil rights was rare on campus, nothing approaching the period during the Vietnam War and years following when students and teachers harassed visiting speakers with whose views they disagreed. During World War II, the threat to academic freedom was most likely to come from the administration or governing boards, yet there were few reported cases of serious invasion of faculty rights by the administration or boards of trustees that were related to the war.

At Cornell University, the study of Russian language, history, and culture expanded during the war, not only in the ASTP language program but in civilian enrollment as well, which generated several newspaper stories suggesting that communism was being taught at Cornell or that the university was demonstrating undue sympathy and support for the Communist government in Russia. President Edmund Day issued a statement defending the study as a legitimate academic endeavor, and the harassment of the university soon dissipated.

In the autumn of 1943, an associate professor of philosophy at Notre Dame University was either dismissed or resigned, depending on whose version was accepted. For more than three years prior to the American entrance into the war, he had flayed anti-Semites, Fascists and isolationists, and campaigned for cooperation with Russia. He claimed he always qualified his remarks by saying that he spoke only for himself and not for the university. The university said he resigned rather than agree to procedures to separate his name from that of the university in his speeches. The professor said he was dismissed after refusing to agree to submit his speeches to prior review.

There were several well-known cases of infringement of academic freedom during the war — as before and since — but most of them dealt with questions unrelated to the war, such as lewd textbooks and the teaching of socialism. Higher education emerged from World War II with its principles of academic freedom relatively secure, having laid the basis for the enormous growth in

academic freedom that developed during the next 40 years.

SERVICES FOR VETERANS

During the war years, several colleges and universities, reflecting memories of the postwar period following World War I, made plans for meeting the needs of men returning from the military services. As early as August 1942, Teachers College at Columbia University established a Commission on Post War Training and Adjustment, an unusual step that at the time seemed to be premature anticipation of the postwar needs of veterans.

In early 1944, Syracuse University announced plans for serving returning veterans to include "vocational and educational guidance, counseling, personalized curricula, and placement for ex-servicemen," as well as to continue the year-round program begun during the war that permitted veterans to complete degrees faster, and to accept veterans without high school diplomas based on military records and aptitude if they were capable. Massachusetts State College at Amherst (now the University of Massachusetts) announced a similar program. In October 1944, the City College of New York announced that it would admit veterans who had completed only two to three years of high school if they could pass maturity tests, adding that they would be probationary students in order to assure that there would be no relaxation of standards.

Several colleges and universities created special programs and even separate schools or divisions for returning veterans. In the 1944 autumn term Syracuse began a special two-year program for veterans leading to the Associate in Arts degree. Admission was through regular credentials or by admission examination if one lacked a high school diploma, not unusual 45 years later but not common at that time. Virtually every college and university in the country made plans to provide special services for returning veterans, particularly the provision of counseling and housing arrangements.

The University of Illinois announced that veterans would be eligible for special scholarships. In the 1944 legislative session in New York State, scholarships were created for 1,200 veterans to attend any college, public or private, in the state.

The support for college men who went to war was expressed in a variety of ways by college and university administrators and boards of trustees, including forgiveness of debts and refunds. It was not unusual for colleges and universities to refund all tuition and fees to students who were called into the military service during a semester, even though they might receive credit for academic work completed. This increased after Pearl Harbor, when male students began to leave the campuses in large numbers prior to the end of a term, but it had started in the autumn of 1940, when students and faculty were called to active duty as members of the National Guard and Army reserves. For

example, in September 1940, shortly after the enactment of legislation authorizing the president to call the National Guard and reserves to active duty, the Board of Directors of the University of Cincinnati, then a private institution, voted to refund tuition and fees of students who were mobilized. In the autumn of 1941, the board reaffirmed that action for any student called before the end of the autumn or spring term.

ACADEMIC CREDIT FOR MILITARY SERVICE

Within months after the outbreak of war, and in the last two years of the war in particular, college faculties and boards of trustees all over the country took action to award course credits to returning veterans based on their military service. The idea was not new; college course credits had been awarded to veterans for military experience following World War I. Ostensibly, the credits were to reflect learning that occurred as a consequence of military service, but it appeared to have been based more on patriotism and desire to show support for students who had gone to war than any objective appraisal of the academic equivalency of wartime experiences.

In February 1942, with amendments in 1943, the faculty at Ohio State University voted to grant 15 quarter hours for service in the armed forces toward degrees in arts and sciences, agriculture, commerce, education, and engineering. Then, in the spring of 1945, in a burst of charity, the faculty recommended and the board of trustees approved a motion to erase all grades of D and E from transcripts of students who withdrew from the university to enter military service between September 16, 1940, and the end of the war.

The California State Federation of Junior Colleges recommended in 1944 that its member institutions award six credits for military service regardless of field or branch of service and, in addition, that the colleges award credit for specialized training in service schools, such as officer candidate school and schools for technicians. At the beginning of 1943, Wayne State University in Detroit announced that it would award eight semester credits to students who completed 13 weeks of basic training in one of the military services.

In mid-1944, the New York State Department of Education announced that veterans would be eligible to receive college credit for various kinds of military service, including ten semester credits for any military service — five credits if they had served less than six months — and would receive additional credit for specialized service schools attended. In 1944, the University of Wisconsin announced that it would accept credits earned through correspondence courses, including U.S. Armed Forces Institute courses, and allow them to be used to meet up to 50 percent of requirements for the bachelor's degree.

Higher education leaders wanted to avoid the situation that developed after World War I in which institutions virtually vied to see which could award the

most credit for military service, based solely on time in the service. At the meeting of college and university presidents in Baltimore on January 3-4, 1942, the conference proposed that "credit be awarded only to individuals, upon the completion of their service, who shall apply to the institution for this credit and who shall meet such tests as the institution may prescribe" (ACE, 1942). However, individual institutions and regional organizations were already beginning to consider alternatives. The Executive Committee of the North Central Association of Colleges and Schools voted on January 12, 1942, to recommend that its members grant college credit equal to one-half semester for basic training, with the credit to be assigned to physical education, hygiene, military training, or electives.

It was apparent to the American Council on Education that something more formal than that would enlist agreement from the entire academic community concerning credit for military experience was needed. A special committee was appointed and met on May 28, 1942, to consider alternatives to granting blanket credit for military service, and passed a resolution recommending that colleges and universities award credit based on examinations, plus credit for correspondence courses offered by accredited colleges and universities and for study in foreign universities. It also recommended that up to one-half semester of college credit (or one semester of high school credit) be awarded for service experience, the academic content of which could be documented and successful completion certified. This amounted to endorsement of the policy approved at the Baltimore meeting plus approval of the North Central Association's recommendation that a half semester of credit be awarded for military service. Thus, the principle was generally accepted long before the end of the war that college credit would be awarded for education and experience in the military services, but this left unanswered the main questions of credit for what, how much, and how to determine it.

Most of the higher education leadership continued to view examinations as the preferred method of assessing learning that occurred while in the armed forces that might qualify for college credit. The U.S. Armed Forces Institute (USAFI) at Madison, Wisconsin, was asked to establish a program of testing to meet this objective. It was the logical agency to assume this responsibility, since most of the courses taken by military personnel were either offered or sponsored by USAFI. USAFI contracted with the University of Chicago Board of Examinations to prepare tests and examinations, which were administered by USAFI.

As the war progressed, individual states and institutions instituted policies that awarded academic credit for specific training programs completed by servicemen, which created pressure on the national leadership to reevaluate its position against awarding credit without examination. In addition, the task of preparing examinations to measure learning in all of the training programs and other learning servicemen and women had acquired while in the military was a

virtually insurmountable task. The project USAFI contracted with the University of Chicago clearly would cover only a small part of the need.

Aside from the policy question of whether to award credit for military experiences without examination, the task of assessing formal courses and other military experiences to determine equivalency to college courses presented an even greater challenge. Long before the war ended, college registrars began to receive inquiries from servicemen and women asking how they might receive college credit for courses completed and other experiences in the military. Initially, USAFI in Madison, Wisconsin, began to process such information and to make it available to institutions, but it soon became apparent that the task was much too large for USAFI.

This led the American Council on Education to appoint a special committee to work with the military services to develop guides for evaluating various courses offered by the military with suggestions as to the amount of college credit to be awarded and in which disciplines. The result was "A Guide to the Evaluation of Educational Experiences in the Armed Services," which was published by the American Council on Education, originally in 1944 in loose leaf form with additional sheets released as more information became available and was published in final form in 1946. Known as the "Tuttle Guide," named for George P. Tuttle, registrar at the University of Illinois, who was chairman of the committee responsible for its preparation, the guide in its final form amounted to some 1,500 loose leaf pages with descriptions of 2,000 courses. The guide was endorsed by 19 professional associations and five regional and two national accrediting associations. By the end of 1946, 17,000 copies had been sent to military offices around the world, and 7,000 copies to colleges and universities and secondary schools. Since then, the guide has been updated and republished in bound form several times.

In developing the guide, Tuttle and his committee worked with the training staffs of the Army, Navy, Army Air Forces, Coast Guard, Marines, and Maritime Service to identify formal courses of training and to document the content of those courses, in order to determine whether each could be accepted as equivalent to a high school or college course and, if so, decide which course and for how much credit. This was obviously a difficult task.

What kinds of educational experiences would be considered for the awarding college or secondary school credit, either by examination or assessment of course content? The list of training programs and other educational experiences finally approved was lengthy, longer than most educators had assumed. It included: the College Training Programs — ASTP, Navy V-12, and AAFTP; correspondence courses offered by or through USAFI, the Marine Corps Institute, Coast Guard Institute, and Maritime Institute; the Navy Educational Services Program, which consisted of both voluntary group classes and self-study, using USAFI materials; basic or recruit training; formal training programs conducted by all of the military services, which accounted for the

large majority and created the most difficulty in assessment; postwar formal education like the unit schools conducted at battalion level, the technical schools such as the one at Wharton, England, the Army university centers, and civilian colleges and universities, primarily in Europe; finally, a wide variety of informal learning experiences including travel, on-the-job training, and other unclassified learning experiences.

Many courses, including some offered on college and university campuses, were not recommended for college credit. For example, an eight-week course in bomb disposal offered at American University was recommended for no credit nor was credit recommended for the radio operator school conducted for the Navy at several institutions. Completion of an Army officer candidate school was recommended as equivalent to advanced ROTC in most cases, but quartermaster OCS was also recommended for six credits in business organization, and finance OCS for three credits in accounting and three in business organization and management. For midshipmen's school (deck curriculum), the guide recommended four semester credits in navigation, two credits in Navy organization, and five credits in NROTC. The guide recommended 30 semester credits for completion of the Meteorology A course at one of the five participating universities or Chanute Field. For completion of the 4.5-month course in radar at MIT, the guide recommended 12 credits in advanced engineering.

Although the Tuttle Guide made suggestions concerning the amount of credit a specific course or military experience might justify, no effort was made by the military services or the American Council on Education to make the decision for individual institutions. Each college or university was responsible for determining the number of credits it would award for various training experiences acquired while in the military service.

The question of how much college credit to award for basic or recruit training received several reviews, but the guide stuck with its original recommendation that these experiences be accepted by colleges as meeting requirements for freshman and sophomore military science, and if the individual spent at least six months in the service, as meeting freshman and sophomore requirements in hygiene and physical training.

In January 1948, a survey of academic deans in 85 colleges and universities, largely in the Midwest and the South, showed that 94 percent were using the Tuttle Guide, and all awarded credit for training, education, and/or experience in the armed services, although one limited it to ASTP and V-12 coursework. The number of credits allowed for various training and/or experience varied. Of 54 institutions that awarded credit for basic or recruit training, five granted three semester credits or less, 18 granted four credits, 19 granted eight credits, and two granted 12 credits, with others in between (Wilcox, 1948).

Earlier, an analysis of policies at 600 colleges and universities found that 90 percent awarded credit for formal service courses completed, 85 percent granted

credit for USAFI correspondence courses, 53 percent granted credit for GED course exams even though the veteran had taken none of the courses, 60 percent granted credit based on examinations administered by the institutions, themselves, and 80 percent admitted by examination veterans who had not completed high school (Brumbaugh, 1947).

Some veterans were able to accumulate a considerable number of credits toward degrees based on their military training and experiences. For example, an ex-Navy man at the University of Florida studying electrical engineering garnered 34 semester credits for military service; he was not atypical. Four credits in military science were awarded to him for having served in the Navy; this exempted him from compulsory ROTC. For several aviation radio technician schools he attended while in the Navy, he was awarded six credits in elementary radio, 12 credits in radio and electronics, and 12 credits in shop practice. He was also awarded six credits in social science and three in mathematics on the basis of GED Tests he took, which gave him 43 credits upon admission toward a degree in engineering.

THE GI BILL

The awarding of benefits to veterans of wars is an old tradition with roots in the wars of the Middle Ages in Europe. Awards have taken the form of land grants, cash bonuses, pensions, medical care, and preferential treatment in access to government services and jobs.

Even prior to the outbreak of World War II, when some observers considered U.S. participation in the war inevitable, there was already talk among congressmen about veterans benefits, and it continued through the war years, both in Congress and the administration. As early as July 1942, President Roosevelt appointed a committee from various governmental agencies to consider postwar demobilization problems. Later, he appointed a committee that included several college and university presidents to look specifically at postwar education of veterans. The latter committee reported in July 1943, setting forth a proposal for the education of veterans that included much of what eventually became the GI Bill, which formed the basis for a recommendation to Congress.

At about the same time the administration's proposal for veterans education and benefits was sent to Congress for consideration, the American Legion also developed a proposal that was introduced into Congress. Both bills were considered by committees of the House and Senate, amended by both, and then further revised by the joint Senate-House conference committee. The final bill, which was approved by both houses of Congress and signed by the president on June 22, 1944, was influenced by both proposals, but was closer to the Legion proposal. Known as the Serviceman's Readjustment Act of 1944, it was dubbed

the "GI Bill" by Jack Cejnar, a public relations man for the American Legion, and the name stuck.

The GI Bill contained several provisions, including vocational and educational counseling, loans to buy a business, loans for operating a business or a farm, home loans, and other assistance, but it became most widely known for its provision supporting college education. The original bill provided for subsistence for single veterans enrolled in college of \$50 a month and for married veterans of \$75 a month; legislation passed on December 19, 1945, raised these amounts to \$65 and \$90, respectively. These amounts may seem small when compared to the costs of attending college a half century later, but they need to be viewed in terms of the costs of attending college at that time. In the autumn semester 1944, the cost of in-state tuition and fees at the following public institutions (room and board in parentheses) was as follows: University of Kansas, \$40 (\$185); University of California, \$28 (\$210); and at these private institutions: Northwestern University, \$161 (\$300); and Stanford, \$143 (\$210) per quarter (Good, 1945).

Much has been written about the fact that the bill was designed to prevent unemployment of veterans after the war, rather than appreciation to veterans for their war service. There is little question that this was a major consideration; members of Congress, recalling the experience following World War I, feared massive unemployment of veterans and social unrest that would likely follow. In short, it was a mechanism for keeping veterans off the labor market and usefully occupied until the economy could absorb them. Even so, there is also evidence that there were many in the administration, in addition to the leadership in higher education, who saw the GI Bill for what it became, a trail blazer in broadening participation in higher education and improving the social fabric of the nation.

Although it is impossible to measure precisely the economic benefits of the GI Bill, various studies have estimated that the return to the taxpayer for investment in the GI Bill more than repaid its costs. The deputy director of the Veterans Administration reported in 1965 that VA studies had confirmed that the 1944 GI Bill had more than paid for itself. The increased income of college graduates educated under the GI Bill resulted in increased tax payments that exceeded the expenditures for their education. Increased income resulted in greater purchasing power and a larger market for goods and services produced by the American economy, thereby providing more and better jobs. Perhaps even more important was the improvement in quality of life, commitment to democratic principles, and improved citizenship, which was manifested in broader participation in the democratic process, wiser personal choices, and the other intangible benefits that a better educated populace enjoys.

Other sections of the GI Bill, especially the on-the-job training and on-farm training programs, came under severe criticism for abuses, charges that very little learning took place, that those programs were often solely or largely

subsidies to industries or to the veterans. Little of this criticism was directed at colleges.

There may have been some veterans who enrolled in college to avoid going to work, but most observers agreed that virtually all of the veterans enrolled in college took their studies seriously and worked to get the most out of their experience. Professors reported that veterans were eager to complete their degrees as soon as possible and to get on with their lives.

However, the colleges did not completely escape criticism. In addition to the stipend, students were authorized a maximum of \$500 per year for tuition, fees, books, and supplies, an amount that greatly exceeded those costs in most colleges and universities immediately following the war. Many colleges raised tuition sharply to capitalize on the payments coming from the federal government. Educators countered that increased tuition was necessary to cover their expenses, but many analysts believed that they would not have raised tuition and fees as much if it had not been for the GI Bill. Further, veterans could choose to attend expensive or inexpensive colleges. A high percentage, understandably, chose the most expensive private colleges to which they could gain admission. When the Korean War veterans bill was developed, the stipend was increased, and the veteran was required to pay his expenses out of his stipend, thereby encouraging him to consider college costs in deciding where to study. There was also petty waste due to veterans buying supplies that they did not require simply because they were allowed, for example, a new pen every semester or a slide rule or other equipment when they already had one.

The GI Bill went into effect immediately, and many veterans enrolled in college before the war was over. As of the end of 1944, approximately 1,500,000 veterans had been released from the armed forces for various reasons, primarily health. Of that number 12,864 were enrolled in training under the GI Bill in the autumn of 1944, of which 73 percent were enrolled in college. Another 6,804 were enrolled, studying under Public Law 16, a bill for disabled veterans similar to the GI Bill.

When the GI Bill was enacted in 1944, various agencies and persons issued estimates of the number of veterans who would enroll in college after the war. President Roosevelt, in his customarily expansive manner, said hundreds of thousands would enroll, but some others were more conservative. Earl J. McGrath, a former dean at the University of Buffalo, at that time an education officer in the Navy, and later U.S. commissioner of education, predicted that in "no academic year will more than 150,000 veterans be full-time students in colleges and universities," and that the total number who would eventually study in college under the GI Bill would be about 640 thousand. He missed by miles! In the autumn term 1946, more than 1 million veterans were enrolled in colleges and universities, and when the program ended in 1956, some 2,232,000 veterans had attended college with support from the GI Bill, a figure that surprised even those whose projections had been considered optimistic.

COLLEGE FOR WHOM

Perhaps the main impact of the GI Bill was its influence on public thinking about who should or could go to college. Following World War I there was a sharp increase in college attendance and throughout the 1930s, when the country was deeply involved in examining the nature of American democracy and opportunities for those less favored, there was a growing sense that less privileged members of society should have greater opportunity for personal growth and development, including education at the postsecondary level. The National Youth Administration had made it possible for thousands of young people to attend college in the 1930s who otherwise would not have been able to do so. This led leaders in higher education to speculate on the possibilities of extending college opportunities more broadly. At the same time, there was growing sentiment for the expansion of junior colleges.

In July 1946, President Harry Truman appointed a commission to "re-examine our system of higher education in terms of its objectives, methods, and facilities; and in the light of the social role it has to play." The commission was composed of 28 national leaders with George F. Zook, then president of the American Council on Education, serving as chairman. The commission's report, entitled *Higher Education for American Democracy*, included recommendations that to many educators and political leaders seemed impossible. It recommended that enrollment in higher education be doubled within a decade, with a goal of 4.6 million in college by 1960. That goal was premature; only 3.6 million were enrolled by 1960. The commission based its projection on the proposition that half of the population had the mental ability to complete 14 years of schooling and 32 percent had the ability to complete a baccalaureate degree.

The commission urged that every state establish a system of community colleges as part of the free public school system, offering both terminal programs of study and transfer courses. By 1990, there were more than 1,000 public community, junior, and technical colleges, if not entirely free, at least low cost and providing opportunities for anyone who wished to pursue further education. With their open admissions policies, admitting virtually anyone regardless of background and preparation, community colleges assured all who desired it the opportunity for at least two years of postsecondary schooling.

The commission also recommended a system of federally funded scholarships to support at least 20 percent of all undergraduate nonveteran students, a goal that had been exceeded by 1990, when grants and loans were combined. It also recommended elimination of racial and religious barriers to admission to college, which by 1990 had been realized to an extent that exceeded the most optimistic hopes of the commission. Quotas limiting Jews from admission to Ivy League and other elite colleges disappeared within a few years after the commission's report, and by the 1970s, race no longer prevented

anyone from admission to college.

The recommendations of the commission were so expansive and seemingly unrealistic that some educational and political leaders did not take it seriously, yet the report was debated vigorously, both in the higher education community and in Congress. A major barrier was opposition to federal aid to education, which began to disappear in the National Defense Education Act of 1958, but it was not until enactment of the Higher Education Act of 1965 that significant movement toward the commission's goals was under way from the federal level.

In the meantime, the country had undergone major change in its thinking with respect to who could go to college. The baby-boomers reached the campus in the 1960s, and both state and federal governments were deluged with demands for more funds for facilities and expanded opportunities in higher education. Although the President's Commission on Higher Education was not predicated solely on the GI Bill, the bill undoubtedly had significant influence on the thinking that went into the commission's work and its report.

THE LEGACY OF WARTIME TRAINING

During and immediately following World War II the scholarly and professional literature of higher education blossomed with optimistic predictions of the uses that would be made by colleges and universities of what was learned about teaching from the military services during the war. Dozens of articles appeared asking, "Can we teach the GI way?"

Some of the wartime changes in colleges and universities themselves remained, but some disappeared soon. Immediately after the war, most institutions abandoned the six-day week and year-round calendar, returning to limited summer class offerings or none at all. Most of those that attempted to continue the trimester calendar, with a view to equalizing enrollments in all three terms, found that enrollments were much smaller in the summer term. By 1985-1986, only 122 institutions were on the trimester calendar; 2,070 followed the semester calendar, most of which ended before Christmas; 820 the quarter calendar; 228 on the 4-1-4 plan with a one-month term in January; and 158 followed a variety of other calendars.

With respect to the military, it is probably an overstatement to claim that colleges learned a great deal that was entirely new. More accurately, what they already knew or suspected was demonstrated or refined by the military, whose manpower and resources were more ample than in colleges. Innovations in training instituted by the Army and Navy were products of civilian institutions, which had developed the theoretical basis for them; the military demonstrated their validity through widespread application.

On the other hand, a great many individual faculty and administrators who served in the military became acquainted with educational practices that were

new to them. In some cases, they knew about them but had not seen them in practice; the military provided convincing evidence of their utility. For example, visual aids such as films, filmstrips, slides, and the like were well known, but many civilian educators who served in Army or Navy saw for the first time how effective they could be in teaching. The military demonstrated the value of formulating instruction around a set of well-defined objectives, the value of learning by doing, the efficiency of teaching skills in a brief period by eliminating all learning that was not essential, the value of feedback and testing, and several others, all of which found their way into college classrooms after the war.

Teaching machines and programmed learning, though not used extensively in military instruction, developed sufficiently to provide the impetus for postwar experimentation and development, leading eventually to programmed learning and computerized instruction. Competency-based education and mastery learning, both of which appeared in the prewar literature, were further developed by the military, so that after the war, professors were able to make significant progress in their development.

During the war, emphasis shifted in most colleges and universities from the basic disciplines to applied studies or to applications of basic disciplines, much to the dismay of many leaders of liberal arts colleges. By the early 1950s colleges and universities had begun to offer curricula that were considered subcollegiate before the war, and within two decades the new curricula were found in hundreds of four-year colleges and universities. In addition, disciplines that had been viewed as limited to the liberal arts with no occupational utility outside academe began to be adapted to the needs of business and industry. Geographers now work on industrial location, anthropologists and sociologists are found throughout business and government and on the faculties of business schools and medical schools, linguists conduct research in the communications industry, graduates in foreign languages are involved in international trade, and psychologists work in advertising, communications, marketing, and many other aspects of business. In almost every discipline in the university can be found evidence of the experiences of World War II, either in curriculum, teaching, or research.

No other wartime teaching activity generated as much interest as the military approach to teaching foreign languages in the Army Specialized Training Program, the Civil Affairs Training Schools, and the Army and Navy language schools. The military system of teaching foreign languages was, as noted in an earlier chapter, essentially application of the Intensive Language Program that had been introduced by the American Council of Learned Societies. In a 1947 study for the American Council on Education, Professor Robert J. Matthew of the foreign language faculty of City College of New York identified more than 200 journal articles written in the last months of the war and up to publication of his book concerning the intensive oral approach to teaching foreign languages

228 *Colleges and Universities in World War II*

used by the military services. Many of them dealt with the merits of the intensive oral method, including ample opposition to it.

Much of the opposition to the military approach to Intensive Language Study was that it was training, not education. That was, of course, the objective of the military and the advocates of that approach; they made little effort to explore the literary aspects of the languages studied. Thus, it was the objectives of the intensive training technique as much as the technique itself that many professors of languages objected to since, in their opinion, the use of that approach denied students much that enriched language studies, indeed in their view the most important aspect of such study in a four-year curriculum.

Language teaching in the military also led to the expansion of language offerings in colleges and universities, including rare languages not before offered. Prior to the war, most colleges offered French, German, Spanish, and perhaps Italian and Portuguese; after the war, some of them added such languages as Chinese, Russian, Japanese, and to a lesser extent Norwegian, Malayan, Arabic, and other more exotic languages.

Modern-day testing owes much to the work of the Army during World War I, when testing psychologists led by Robert Yerkes and Lewis Terman were enlisted by the Army to develop not only the Army Alpha Test, but also a variety of tests for classification of soldiers and for measurement of achievement. Between the wars, the testing movement made vast strides, and again in World War II testing psychologists were called on to provide the military services with an even greater variety of tests. From that experience, postwar testing has grown significantly, providing hundreds of achievement and predictive tests used in colleges and universities.

Perhaps the most important outcome of World War II for colleges and universities was the development of federally funded research which, prior to the war, was insignificant. The wartime experience set the stage for the massive growth in federal funding for research in colleges and universities which has brought about major changes in the role of universities.

Prior to the war, except for research in land-grant colleges of agriculture, not many faculty on college and universities campuses had federally funded research projects. About the only source of external funding of university research came from private foundations, and it went largely to medicine and the basic sciences. Most research tended to be conducted on a shoe string, particularly in the humanities and social sciences and, in less distinguished institutions, in the natural sciences, as well, with small amounts of money from departmental operating budgets and without any time allotted for research. Most faculty who conducted research carried heavy teaching loads, at least 12 semester credits and often 15 credits, particularly in the humanities and social sciences, and conducted research without funding in whatever time they could find in their schedule of teaching and counseling students. In addition to agriculture, a small amount of research support from state governments went to

engineering experiment stations found in some of the state technological institutions and land-grant colleges, but the amounts were small compared with later funding.

The war contributed immensely to the growth of science and technology, not only through federal funding, but in other ways as well. More recently, the national space program has provided the stimulus for the production of miniaturized electronics, especially components that are used in computers and a variety of equipment used in health care, but the defense industry in World War II also produced many discoveries that provided nonmilitary benefits to mankind.

The development of atomic energy stands out as a major advance not only as a weapon of war but for a multitude of purposes, and there were dozens of others. America was forced to develop synthetic rubber, which is now essentially its sole source of rubber. Dehydration and advances in food processing during the war led to giant steps later in food marketing. Many products and processes were not new, but were improved and made more feasible during the war. We learned how to mass produce penicillin at a fraction of its prewar cost, DDT was refined and widely used for three decades after the war in the control of mosquitoes and other insects; plastics and synthetic fibers were improved, and processes perfected for preserving blood, processing blood plasma, and storing it successfully not only saved lives during the war but were major advances in health care after the war. Many argue that the research experiences of World War II were primarily responsible for the vast strides made in the American economy in the quarter century following and for the increase in the standard of living enjoyed by its people.