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ABSTRACT

The U.S. college curriculum has its origin in the medieval university of England. This classical education based on the seven liberal arts formed the basis for the early colonial colleges. From its earliest days, the curriculum was relevant in the preparation of students for the professions of the period. Over time, the curriculum evolved and adapted to the larger trends in U.S. society. Colleges, however, did not change the curriculum without intense debate or grave reservations. This paper traces the development of the U.S. higher education curriculum from the first nine colleges founded before the American revolution, through the age of empiricism and enlightenment, and the growth in colleges. The development of women's colleges, black colleges, and engineering schools is outlined. By the eve of the Civil War, there were 250 colleges in the United States and a great demand for utilitarian learning. In this era, the system of elective courses began to thrive. The Morrill Acts and the Land Grant College Acts continued the westward growth and development of U.S. higher education. By the end of the 19th century, the U.S. curriculum had evolved into a flexible and diverse system never anticipated by colonial colleges. (SLD)



A HISTORICAL REVIEW OF CURRICULUM IN AMERICAN HIGHER EDUCATION: 1636-1900

Emergence of Higher Education in America

Thomas J. Denham

Siena College

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INTRODUCTION

The American college curriculum has its origins in the medieval university model of England. This classical education based on the seven liberal arts (grammar, rhetoric, logic, astronomy, arithmetic, geometry, and music), formed the basis for the early colonial colleges. From its earliest days, the curriculum was relevant in the preparation of students for professions of the period. Over time, the curriculum eventually evolved and adapted to the larger corresponding trends in American society. The colleges did not change the curriculum without intense debate or grave reservations.

COLONIAL PERIOD: 1636-1789

The First Nine Colleges

In 1636, the general court of Massachusetts appropriated funds for the establishment of a college in Cambridge (Lucas, 1994, p. 104). Two years later, Harvard College was named for John Harvard, a puritan minister, who bequeathed books and funds for the college; instruction began that summer. In the 1640s, under the key leadership of President Henry Dunster, Harvard was converted from an infant institution into an acceptable college, and Dunster taught most, if not the entire curriculum in his early years (Goodchild & Wechsler, 1989, p. 47). The curriculum consisted of Bible studies and Bible languages (Latin, Greek, and Hebrew), together with logic, ethics, philosophy, astronomy, and geometry (Gwynne-Thomas, 1981, pp. 147-149). In its early years, with this type of curriculum, Harvard served primarily as a training ground for ministers. The institution, however, attracted few students since many fathers refused to send their sons for this type of an education. This form of study was not of the sort that appealed to men of practical inclination (Rudolph, 1962, p. 16).

Eight other colleges were founded prior to the American Revolution: William and Mary (1693), Yale (1701), the University of Pennsylvania (1740), Princeton (1746), Columbia (1754), Brown (1764), Rutgers (1766), and Dartmouth (1769) (Goodchild & Wechsler, 1989, p. xxvii). Cowley and Williams (1991) cite that the mission of Columbia was, "for the Instruction and Education of youth in the Learned Languages, Liberal Arts and Sciences in the Province of New-York, in the City of New York, in America" (p. 82). Founded by Anglicans, Columbia adopted the curricular pattern of Princeton, which had been built upon that of Harvard and Yale (Cowley & Williams, 1991, p. 83). In addition to a classical education, the colonial college was consumed with instilling in its students the notion of proper conduct, character development, and civic virtue. Scholasticism was a philosophy of thoughtfulness and deduction that contributed to



this theme (Rudolph, 1962, pp. 30-31). Unfortunately, the colleges of this period did not impact the lives of the majority of the citizens, since no more than one in every thousand colonists attended any of these in existence prior to 1776 (Lucas, 1994, p. 109).

Colonial Curriculum Content

Imported from Europe, the curricula of the colonial colleges were creatures of both the Reformation and the Renaissance. They valued both the sectarian and the humanistic ideals of classical scholarship with the goal of creating learned clergymen, as well as gentlemen and scholars (Rudolph, 1962, pp. 23-25). A major problem in the colonies was the scarcity of books, and many had to be imported from England (Gwynne-Thomas, 1981, pp. 147-149). What few books there were encompassed Latin, the language of the Reformation, and Greek and ancient Greece, the rediscovery of the Renaissance. Latin was the language of the law, church, medicine and Aristotle. Greek was the language of the new humanism of Renaissance learning that brought Homer and Hesiod, Greek lyrics and idylls into the experience of an educated man. Harvard attempted to recreate the old Cambridge in England with a curriculum to turn out clergymen, scholars, squires, public servants, men of contemplation and men of action, governors and governed (Rudolph, 1962, pp. 23-25). Similarly, the College of William and Mary in Virginia was built on the model of Queen's College at Oxford, for the purpose of supplying clergymen for a crown colony (Cremin, 1977, p. 18).

In the colonial curriculum, Latin and Greek served as tools for the teacher and student to explore Aristotle's three philosophies (natural, moral, and mental) and the liberal arts of the medieval curriculum. Unlike today, they were living languages for learning in logic, rhetoric, ethics, metaphysics, astronomy, physics, and mathematics. These subjects formed the basic course of study at the colonial colleges. Latin, Greek, logic, Hebrew, and rhetoric were studied in the first year. The following year, Greek and Hebrew were continued with and introduction to natural philosophy, that later evolved into physics. In the junior sophister year, mental and moral philosophy were taught, which evolved into today's economics, ethics, political science, and sociology. The senior sophister year was a review in Latin, Greek, logic, and natural philosophy; mathematics was also begun. At Yale, the sequence differed, but the subject matter and the focus was similar (Rudolph, 1962, pp. 23-26). In terms of evaluation, the syllogistic disputation, while employed throughout the year as a means of conducting discussion, served as a commencement exercise in the colonial college. Confronted with a thesis, a statement of some universal truth, two students, one serving as a disputant and one serving as a questioner, would



apply their powers of dedication to establish the validity of the thesis. This scholastic method served as an examination of what a student had learned in their four years (Rudolph, 1962, pp. 30-31). This of program of study of classical learning was assumed to be the recipe for success in the various learned professions of law, medicine, or theology. It was a body of knowledge that was to be absorbed and memorized, not criticized or questioned (Lucas, 1994, p. 109).

Empiricism and Enlightenment

Harvard was a flagship in terms of curriculum that responded to changes in society. Its curriculum, originally designed to produce clergymen and statesmen, was diluted by a trend toward empiricism, a scientific point of view that questioned old truths and established new ones. By 1659 in the field of astronomy, the Ptolemaic system was out and the Copernican system was in, with a new telescope scanning the skies over Cambridge. In the late seventeenth century under the direction of Charles Morton, natural philosophy turned Newtonian-oriented. In the early eighteenth century, John Winthrop presided over the first laboratory of experimental physics in America (Rudolph, 1962, pp. 23-26). Similarly, Yale imported a telescope, microscope, and barometer from Europe in 1734 and began exposing students to Locke, Newton, and Copernican theory. In 1745, Yale made mathematics an entrance requirement, thereby ending the exclusive reign of Latin and Greek. On the eve of the American Revolution, Newtonian empiricism and inductive reasoning were challenging the teachings of the church and deductive reasoning respectively; more attention was being paid to mathematics and natural science in America (Rudolph, 1962, pp. 29-30).

The legacy of the American Revolution to the American College was a widely held belief that the colleges were now serving a new responsibility to the new nation: the preparation of young men for citizenship in a republic that must prove itself. The Enlightenment and the Revolution shifted the curriculum from medieval model to an emphasis on natural law and the realm of science. For example, at William and Mary, Thomas Jefferson, as governor of Virginia and member of the college's board of visitors, attempted to reorganize the curriculum with an emphasis on the practical and the public. Although he was not able to accomplish all of his objectives, Jefferson's progressive themes had an impact on colonial curriculum development (Rudolph, 1962, pp. 40-41). In 1792 at Columbia, professorships of economics, natural history, and French were an indication that Enlightenment was taking hold. Similarly, in 1795 at the University of North Carolina, plans were in the works for professorships of chemistry, agriculture, mechanic arts, and languages, including the most neglected and most useful



language, English. Noah Webster created spelling books and a dictionary, and as a result, had a significant impact in promoting the English language in the United States. Benjamin Rush, a Philadelphia physician and education advocate, warned that the ancient languages could stand in the way of development of the country. He said, "To spend four or five years in learning two dead languages, is to turn our backs on a gold mine, in order to amuse ourselves catching butterflies" (Rudolph, 1962, p. 43).

THE NATION EMERGES AND THE COLLEGES DISPERSE: 1789 - 1865 Small Liberal Arts Colleges

During this era, the trend was toward a more fragmented, varied, vocational and specialized curriculum, and the conflict between advocates of classical studies and advocates of practical studies continued. As college enrollments grew and universities rapidly expanded westward, the intellectual community learned to allow religion and different thought patterns to coexist (Cohen, 1998, p.74). Small, and often highly selective liberal arts colleges represent another element of higher education in America, and were models of the original colonial nine schools. As nineteen new colleges were established between 1782 and 1802, they turned less sectarian and introduced new courses of study (Gwynne-Thomas, 1981, pp. 147-149). Union College became the first college chartered by the Regents of the State of New York in 1795, and by 1845 it became the first liberal arts college in the nation to include engineering in its curriculum. Under the leadership of Eliphalet Nott from 1804-1866, the college had a strong emphasis on science, mathematics, and modern languages (Cohen, 1998, p. 78). Two types of teachers, temporary tutors and regular professors, taught the curriculum of nineteenth century colleges (Lucas, 1994, p. 126). Harvard, Yale, and Princeton supplied many of these leaders and faculty for other small liberal arts colleges, including Williams, Middlebury, Amherst, Dennison, Wooster, St. Lawrence, Bowdoin, Colby, Bates, Hamilton, Colgate, and Oberlin (Cremin, 1977, p. 54).

Women's Colleges, Black Colleges and Engineering Schools

Early colleges for women such as Mt. Holyoke, Wesleyan Female College, Vassar, Smith, and Wellesley followed the men's colleges with curriculum in the humanities, science, and social science. In addition, courses of study in social work, home economics, music, art, childcare, and elementary teaching were added. This program of study prepared women for the career that society expected of them: librarians, social workers, nurses, and teachers (Cohen, 1998, p. 147). Vassar College was founded in 1861 to train women, but it later evolved into a



co-educational institution (Cremin, 1977, p. 54). By 1870, the impact on society of women's colleges was minimal since it was estimated that less than one percent of women were attending college; by 1890 it was no more than 2.5 percent (Lucas, 1994, p. 156). In addition, black colleges in America at this time offered little above secondary training. Some, like Howard and Fisk, were at best, engaged in teaching the rudiments of literacy. The curriculum was not even remotely teaching a college-level liberal arts curriculum that many black institutions were promising. Booker T. Washington, founder of Tuskegee in 1881, advocated utilitarian education for business trades. W.E.B. DuBois of Atlanta University denounced Washington's focus in favor of black higher education of a more traditional type (Lucas, 1994, pp. 163-164).

The rise of the scientific method of inquiry made its inroads in the newly formed technical colleges with the introduction of new studies in engineering, agriculture, mechanics, and manufacturing (Cohen, 1998, p. 74). As a result, the groundwork for specialized programs and the elective system was being laid: "The United States Military Academy at West Point was established in 1802 to train officers for the armed services, and ended up also training most of the pre-Civil War engineers in the United States who did not come solely via the route of apprenticeship" (Cremin, 1977, p. 54). West Point's curriculum was centered on mathematics, chemistry, and engineering (Cohen, 1998, p. 75). Further up the Hudson River, Rensselaer Polytechnic Institute (RPI) opened in 1826. Stephen Van Rensselaer financed and organized RPI "to qualify teachers in the application of experimental chemistry, philosophy, and natural history to agriculture, domestic economy, the arts and manufactures" (Cowley & Williams, 1991, p. 115). In 1850, since many of its students had previously graduated from Harvard, Yale, Princeton, and other "literary seminaries," this made RPI in fact, if not in name, the nation's first graduate school outside the traditional professions (Cowley & Williams, 1991, p. 115). RPI taught science through laboratories and fieldwork. The curriculum was relevant since graduates of these schools pursued work in building the nation's railroads, as well as the mining and manufacturing industries that developed in the second and third quarters of the nineteenth century (Cohen, 1998, p. 75).

The Impact of the Yale Report

Greek and Latin were still being taught in most institutions during this period, but the teaching of modern foreign languages expanded (Cohen, 1998, p. 75). Under the leadership of President Jeremiah Day, the Yale Report of 1828 was developed. This landmark report took the position that students should be required to study a variety of topics so that all the areas of the



mind (reasoning, accuracy in expression, etc.) would be exercised. The report became the most widely read and influential statement of educational philosophy of the era. Essentially, it was a defense of traditional classical education, made way for new courses of instruction and discounted religion as the centerpiece of the curriculum (Lucas, 1994, p. 132). The Yale Report helped justify other institution's decisions about curriculum development (Cohen, 1998, p. 76).

Thomas Jefferson's University of Virginia opened its doors in 1824. The faculty were subdivided into specialties of languages, mathematics, history and other new areas of study. By mid-century, classics, mathematics, science, history, and philosophy were all represented, but few campus leaders dared to imply that any of the traditional subjects be eliminated (Cohen, 1998, p. 77). At the 1829 inauguration of Josiah Quincy of Harvard, he suggested a parallel course of study, one in the classics and another suited for a more modern institution. For fifty years this parallel curriculum solved the problem of attracting more students by adding new courses while maintaining a classical program to uphold traditional standards. The classical curriculum continued to survive because it had a purpose: to train for the professions of law, medicine, and ministry. During this era, the curriculum was in flux. There was a collection of traditional forms focusing on the classics alongside new areas of study such as science and vocational subjects. Instruction shifted from recitation and disputation to lecture and laboratory. Especially in the sciences, the combination of lecture and demonstration encouraged students to carry out experiments on their own and thereby demonstrate their acquisition of knowledge (Cohen, 1998, pp. 81-83).

RECONSTRUCTION AND INDUSTRIALIZATION: 1865-1900

Curriculum Content Changes

By the eve of the Civil War, there were 250 colleges in America, and there was a growing demand for utilitarian learning (Lucas, 1994, p. 117). As more and more students took advantage of higher education, the curriculum expanded and continued its trend toward vocational education. Colleges were tacitly preparing students for specific careers, providing an environment for research, and gaining prestige. Under the leadership of Daniel Gilman, Johns Hopkins University focused on research, scholarship and advanced learning at the graduate level. Many institutions looked to this new school as a model research center. Hopkins also furthered the idea that a doctoral degree was an essential credential for university teaching (Cohen, 1998, pp. 134-139). In 1892, President William Rainey Harper opened the University of Chicago and asserted that the institution's focus would be on scholarship and research (Lucas, 1994, p. 173).



The Elective System

During this era, the elective system began to thrive, and by the end of the century, over half the courses offered in America were electives. With church doctrine confined to the separate discipline of theology, philosophy and literature blossomed. This period witnessed the proliferation of diverse degrees, with bachelor's degrees specializing in numerous areas of study. In 1892, under the direction of the NEA (National Association of Education) the Committee of Ten issued a report proposing a model high school curriculum that would prepare students for college study. This attempt by national collegiate leadership to impose its expectations on the high schools was met with criticism, and this form of curriculum only picked up by a minority of secondary schools, and then steadily declined into the new century (Cohen, 1998, pp. 134-139).

The uniform college experience began to disappear with the elective system, since a bachelor's degree was now merely an accumulation of 120 disparate college credits. The elective system sent the philosophical message that the college had no authority to prescribe a curriculum. It was not until the twentieth century that the General Education Movement reacted to the fragmented curriculum (Cohen, 1998, pp. 142-145). Discussion groups modeled after the German university seminars grew in popularity during this period, suggesting that students were thinkers. Laboratory work became required in the sciences. Individual recitations were phased out in favor of written examinations administered to all students in a particular class. By the end of the nineteenth century, the size of the institution remained a major determinant of the type of curriculum and instructional format (Cohen, 1998, pp. 149-150).

The Morrill Acts and the Land Grant College Acts continued the westward growth and development of American higher education. Land Grant schools typically emphasized the practical over the ornamental (Lucas, 1994, p. 151). In 1865 the New York legislature chartered Cornell University, turning over to it New York's share of the federal land grants of 1862. It applauded the \$500,000 benefaction of Ezra Cornell, and justified its name and the controlling role that he would play in shaping the institution. Cornell grew in size and diversity and boasted numerous colleges within the university, including an agricultural school, medical school, and school of industrial and labor relations (Rudolph, 1962, p. 266). In the 1870s, President Eliot at Harvard and President White at Cornell passionately aspired the American university to become "modern" with more electives. By 1869, Cornell was allowing an almost unrestricted system of electives. On the other hand, advocating the traditional approach was Noah Porter at Yale, defending the notion of a single prescribed course of study for all (Lucas, 1994, p. 167).



As late as 1880, most science courses in the American college was taught under the label of natural philosophy. Scientific equipment was known as philosophical apparatus, and laboratories were called philosophical chambers. Despite the fact that Aristotelian terminology persisted almost to the end of the nineteenth century, it could not stem the rising tide of Newtonian science (Rudolph, 1962, p. 29). The impact of these changes during the last half of the nineteenth century was the promise of social mobility to those willing to subject themselves to the rigors of the academy (Lucas, 1994, p. 123).

SUMMARY

The curriculum of American higher education begins with the traditions of Oxford and Cambridge. In 1650 the colonies had about 50,000 inhabitants, but fifty years later immigration grew to over 2.5 million and a westward migration of settlement that appreciably loosened church-colony ties (Gwynne-Thomas, 1981, p.147-149). The South was devastated from the ravages of the Civil War, and Reconstruction would hardly touch academic institutions until toward the end of the century (Lucas, 1994, p. 142). Eventually, with the changing political, economic, and social nature of the new nation, the curriculum adapted to a parallel course of study: the traditional classical education, and the more modern, practical program. New courses of study were added as America matured and expanded. By the end of the nineteenth century, the American curriculum evolved into a flexible and diverse wealth of courses beyond the imagination or likings of the colonial faculty.



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