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THE DEVELOPMENT OF A CURRICULUM IN THE EARLY AMERICAN COLLEGES

Joe W. Kraus

The early American colleges were smaller and poorer counterparts of the universities of Great Britain, rather than indigenous institutions, and the mother country was the source of their curriculum. At Cambridge University, which became the intellectual center of the Puritan movement, the curriculum of studies had evolved from the medieval *trivium* (grammar, rhetoric, logic) and *quadrivium* (arithmetic, geometry, astronomy, music) and from the three philosophies (natural, moral, mental). But interest in mathematics had dwindled by 1700, and the study of classical authors was revived. The universities were still governed by the Elizabethan statutes of 1561, which required that each student be proficient in rhetoric, logic, and philosophy, and that they be tested in these subjects by public disputations before being admitted to a degree. Beyond these requirements, the subjects to be studied were determined by a tutor, who was responsible for the four or five students assigned to him.

The purpose of the studies at Cambridge was to perfect the student's knowledge of Latin and Greek, to acquaint him with the thought and method of scholasticism, and to instill respect for the authority of the ancients. The student followed no prescribed course of post-graduate studies but was expected to spend three years attending public lectures, studying theology and Hebrew and other Old Testament languages, participating in regular disputations, and, finally, in making "three personal responses in the public schools to a Master of Arts opposing." Bachelors of Arts who did not seek a career in the Church or in the University might study at home and receive their degree upon paying a discontinuance fee and passing a perfunctory examination.¹

Although Harvard was founded by the General Court of Massachusetts in 1636, instruction probably did not begin until July or August 1638. The almost disastrous year of 1638-39, when the tyrannical methods of Nathaniel Eaton, the first master, and the slovenly housekeeping of his wife caused wholesale desertion of the college by the students delayed the development of higher education in the American colonies. With the appointment of President Henry Dunster in 1640, however, a modified version of

the Cambridge curriculum was put into effect. The four-year course was reduced to three to encourage students to return, and courses were so arranged that all students worked on related subjects each day. The schedule was: Monday and Tuesday mornings, logic (first year), ethics and politics (second year), arithmetic, geometry, and astronomy (third year), with study and disputation periods in the afternoons; Wednesday, Greek; Thursday, Hebrew; Friday, rhetoric; Saturday, divinity catechetical and, for freshmen, history and the nature of plants. This schedule made it possible for the president to conduct all the classes and still have time for administrative duties, and it followed the advice of Pierre de La Ramée that students should have a lecture on each subject, followed in turn by individual study, recitation, discussion, and disputation. In 1655 the first year was expanded to two years, more attention being given to the study of Greek, Hebrew, logic, and metaphysics.

As at Cambridge, logic was a basic subject which provided discipline in the art of thinking as well as an introduction to advanced studies. Rhetoric was studied from a number of *florilegia* and by declamations in Latin and Greek given before small groups and in monthly programs before the entire school. At morning and evening prayers students translated the Old Testament from Hebrew into Greek (freshmen were permitted to translate from English into Greek) and New Testament verses from English into Greek, an exercise both practical and devotional. Politics and ethics were among the courses for junior sophisters, but politics meant a study of Aristotle's *Politica* rather than political science. Ethics was a more practical subject, considered apart from theology.

Scientific subjects received comparatively little attention in the early years at Harvard. President Dunster lectured to freshmen on the nature of plants for one quarter and taught arithmetic, plane and spherical geometry, and astronomy to senior sophisters. With the appointment of Charles Morton to the faculty in 1686, physics probably became a prescribed subject, for several manuscript copies of his *Compendium Physicae* have survived in the handwriting of students of that period.

Study of Hebrew, Aramaic, Syriac, and theology were undergraduate subjects at Harvard, although not at Cambridge; but the study of theology was limited to such manuals as William Ames's *Medulla Theologiae* or *De Conscientia*, and Johann Wolleb's *The Abridgement of Christian Divinitie*. Passages were memorized by all classes and recited to the president on Saturday morning.

Preparing and reading logical analyses of passages from the Scriptures at morning and evening prayers provided simultaneous training in logic, Greek, Hebrew, and the Bible.

Disputations, which followed the formal rules of the medieval universities, were required of all students above the freshman year twice each week. During the final term of the senior year, the aspiring bachelors were examined before a committee of gentlemen from the neighboring community, and at Commencement a printed list of theses prepared by all seniors was presented to members of the audience; the theses that were to be delivered were indicated by typographic devices.

Three years of post-graduate study were required for the M.A. degree, but, as at Cambridge, this was a program of individual study. There was no residence requirement, and the student could be, and often was, guided in his studies by a minister. He was required to give a commonplace, or sermon, before the college body, to present a written "Synopsis, or Compendium of Logicke, Naturall Philosophy, morall philosophy, Arithmeticke, Geometry or Astronometry," and to have "thrice problemed, twice declaymed" before the society. Considerable flexibility seems to have been allowed in permitting "some answerable exercise in the Studyes that he is most Conversant in," as a substitute for the more formal requirements.

By 1723 most of the freshman year was spent in reviewing Latin and Greek grammar and in beginning the study of Hebrew and logic. Sophomores continued to study logic and to read classical authors, and they began to study natural philosophy. In the junior year, ethics, geography, and metaphysics were the new subjects, while natural philosophy was continued. In the senior year, arithmetic, geometry, and astronomy were added.²

Although a Collegiate School was established at Killingworth in 1701, lack of funds and rivalry among competing towns delayed the development of a rival to Harvard until Elihu Yale's gift in 1718 helped to settle the dispute in favor of New Haven. The founders of the new college were Harvard graduates, as historians of the latter institution take pleasure in pointing out, and the earliest minutes of the trustees directed the rector to "make use of the orders and institutions of Harvard College for the instructing and ruling of the Collegiate School so far as he or they shall judge them suitable and wherein we have not at the present meeting made provision."³ Jonathan Edwards, who was a student at Wethersfield in 1715, faithfully reported to his father the principal subjects he studied: Hebrew and advanced study in Latin and

Greek in his freshman year, logic during the second year, physics in the junior year, and metaphysics and mathematics in his senior year. Syllogistic disputations, translations of the Old and New Testaments, and logical analyses of Bible texts were assigned to all students.⁴ The laws drawn up by Rector Thomas Clap in 1745 place more emphasis on science and less on languages:

In the first Year They Shall principally study the Tongues and Logic, and shall in Some measure pursue the Study of Tongues the Two next Years. In the Second Year they shall Recite Rhetoric, Geometry, and Geography. In the Third Year, Natural Philosophy, Astronomy, and other Parts of the Mathematics. In the Fourth Year, Metaphysics and Ethics.⁵

Six of the seven original planners of the College of New Jersey were graduates of Yale, including the first two presidents, and the curriculum was modeled closely after the courses at Yale, with some additional influences from the English dissenting academies. A letter from Joseph Shippen, a student in 1751, to his father outlines the work of a freshman:

At the present time at 7 in the morning we recite to the President lessons in the works of Xenophon in Greek and in Watt's Ontology. The rest of the morning until dinner time we study Cicero de Oratore and the Hebrew grammar and recite our lessons to Mr. Sherman, the college tutor. The remaining part of the day we spend in the study of Xenophon and Ontology to recite the next morning. And besides these things we dispute once every week after the syllogistic method; and now and then we learn Geography.

Other letters of Shippen indicate that rhetoric, logic, Horace, Virgil, Cicero, and a limited amount of science were read later in the freshman year. He continued his study of natural philosophy in the second year, and his junior year emphasized moral philosophy and a continuation of science. The senior year was devoted to a review.⁶ Later in the century, the study of classical languages received less emphasis, while science and moral philosophy were strengthened. John Witherspoon described the course in 1772 in these words:

In the first year they read Latin and Greek, with the Roman and Grecian Antiquities, and Rhetoric. In the second, continuing the study of the languages, they learn a compleat system of Geography, with the use of the globes, the first principles of Philosophy, and the elements of mathematical Knowledge. The third, though languages are not wholly omitted, is chiefly employed in Mathematics and Natural Philosophy, and going through a course of Moral Philosophy. In addition to these, the President gives lectures to the Juniors and Seniors, which consequently every student hears twice over in his course, first upon Chronology and History, and afterwards upon the Composition and Criticism. He has also taught the French language last winter, and it will continue to be taught to all who desire to learn it.⁷

The College of Philadelphia (later the University of Pennsylvania) began collegiate instruction in 1751. The curriculum which its historian calls the earliest American collegiate studies not following medieval tradition nor having specifically religious objectives dates from the appearance of William Smith in 1754.⁸ In 1752 Smith had published *A General Idea of the College of Mirania* in which he outlined his ideas on collegiate education for the guidance of the board of trustees for a projected college in New York. The trustees were unmoved, but Benjamin Franklin, to whom Smith had thoughtfully sent a copy of his work, was impressed, and in May 1754 Smith was appointed to teach logic, rhetoric, ethics, and natural philosophy in the College of Philadelphia. In March 1755 he was made provost.

The differences between this curriculum and those at Harvard, Yale, and Princeton were more in emphasis than in choice of subjects. The studies of the first year of the three-year curriculum included Latin and Greek composition; arithmetic, algebra, geometry, and logarithms; and classical and rhetorical studies. The second year prescribed more mathematics, logic and ethics, and added natural philosophy and classical readings followed by original orations written on classical models. The final year included natural and civil law, civil history, laws and government, trade and commerce, and further natural philosophy.⁹ The courses were divided, roughly, one-third to classics, one-third to mathematics and science, and one-third to logic, ethics, metaphysics and oratory. Despite this new emphasis, syllogistic disputations and declamations were still a regular part of the curriculum.

During the same year that Provost Smith's plan was introduced in Philadelphia, King's College was established in New York and Samuel Johnson was appointed the first president. The Laws and Orders of June 3, 1755, required freshman students to perfect their studies in Latin and Greek classics and to study compendia of rhetoric, geography, and chronology. In the second and third years logic, mathematics and the branches of experimental philosophy, "Agriculture and Merchandize," and additional study of the classics and criticism were the subjects. In the fourth year the student proceeded to metaphysics, more logic, moral philosophy, criticism, and the principles of law and history. Myles Cooper, who was appointed president in 1763, revised the curriculum to conform more closely to the English universities. His Plan of Education included no mathematical works among the books to be read and

placed more emphasis on classical authors, logic, ethics, metaphysics, and moral philosophy.¹⁰

Although the College of William and Mary was chartered in 1693, a collegiate program was not established until 1726. In addition to providing for a grammar school and the English school for Indian boys, the board of visitors provided for a school of natural philosophy and mathematics and a school of moral philosophy.¹¹ A few comments on studies in the manuscripts of Eleazar Wheelock, who founded Dartmouth College in 1769, indicate that he followed the classical curriculum of Yale, where he had graduated in 1753. At the College of Rhode Island, President James Manning followed the curriculum that he had studied at the College of New Jersey, and similarly at Queen's College, Frederick Frelinghuysen organized the first courses on the model of the ones at the College of New Jersey where he had graduated the preceding year.

During the second half of the eighteenth century colleges began to depart from the established curricular models with considerable freedom. These variations, although interesting in themselves, are less important than some of the larger shifts in emphasis and in methodology that were adopted, to some degree, by each of the colleges.

The tutorial system, in which a tutor taught all subjects to a group of students throughout their college career, was the accepted faculty organization at Harvard, the first American colonial college, until the creation of the Hollis professorship of divinity in 1722. A second gift from Thomas Hollis in 1727 established a professorship of mathematics and natural philosophy, and a third chair, the Thomas Hancock professorship of Hebrew and other Oriental languages, was created in 1764. In 1766 the tutorial system was abolished altogether, and henceforth tutors and professors at Harvard were assigned to subjects rather than to classes.

The College of William and Mary opened with plans for a president and faculty of six professors assigned by subjects, but only with a paper organization. In 1712 a professor of mathematics was appointed, and by 1729 faculty members were assigned to teach moral philosophy, Hebrew, the Old and New Testaments, and "commonplaces of divinity and the controversies with heretics." Additionally, there was a master in charge of the Indian School. By 1780 Bishop James Madison described the organization of the college as consisting of the following professors: mathematics and

natural philosophy, law and police, chemistry and medicine, ethics and belles-lettres, and modern languages.

Although the Yale Corporation had voted to choose a professor of divinity in 1753, it was not until 1756 that Naphthali Daggett was appointed to that post. A second professorship, of mathematics and natural philosophy, was created in 1771, but instruction by tutors prevailed throughout most of the eighteenth century. Similarly, tutors were used at the College of New Jersey until 1767, when professors of divinity and moral philosophy, mathematics and natural philosophy, and languages and logic were appointed.

The 1755 charter of the College of Philadelphia provided for a faculty, in the present-day sense of the word, with Provost William Smith as professor of moral philosophy; Vice Provost Francis Alison as professor of higher classics, logic, metaphysics, and geography; Theophilus Grew as professor of mathematics; and Paul Jackson as professor of languages. After King's College began with only the learned services of President Samuel Johnson and completed a second year with the assistance of his son, William Samuel Johnson, it initiated a proliferation of professorships, many of which were nominal or part-time commitments. In 1757 Daniel Treadwell was appointed professor of mathematics and natural history; Myles Cooper served as professor of moral philosophy from 1762; and John Vardill became professor of natural law in 1773. When the school was reorganized as Columbia University in 1784, an ambitious plan was begun for seven professorships (and nine extra professorships, without pay) in the faculty of arts, eight in the faculty of medicine, and three in the faculty of law. Appointments were actually made in Latin and Greek, rhetoric, geography, and natural philosophy, and astronomy in the arts faculty. At the College of Rhode Island two professorships were established in 1784, the Corporation voting to establish other professorships in the various studies as fast as qualified people might be located.

The gradual change from the syllogistic disputation to the forensic debate was an important shift in methodology.¹² Disputations following the rules handed down from the medieval universities, which were in use in all the colleges, began to decline in popularity by mid-century. President Wadsworth of Harvard had difficulty in arousing interest for the exercises in 1725 and 1726, and the Harvard Laws of 1734 required only juniors and seniors to participate. The Yale Laws of 1748 reduced the requirement from five times to once each week, and the 1763 Laws of King's

College omitted the disputation requirement altogether. Ezra Stiles noted in his diary of July 21, 1789, that "the Seniors have had but one Syllogistic Disputation this year, and perhaps half a dozen last year. There was only one last Commencement—none this. Thus farewell Syllogistic Disputation in Yale College much to my mortification."

It has been suggested that the blame for the decline of the disputation may be laid to a dislike of formal argument by students and by Commencement audiences; to an increased emphasis on legal and governmental rather than theological training in the colleges; to the limitations on delivery and proof imposed by syllogistic logic; and to a recognition of the weaknesses of the syllogism as a device for ascertaining truth.

The forensic debate, unlike the syllogistic disputation, was delivered in English rather than Latin and did not require arguments to be in syllogistic terms. A moderator presided over the debate, weighed the arguments presented by the four to eight participants, and gave a "determination" at the conclusion. The forensic method was both more flexible in performance and more conducive to treating questions of current interest; syllogistic disputations were limited to the traditional groupings—theses *technologicae*, *logicae*, *grammaticae*, *rhetoricae*, *mathematicae*, and *physicae*. Forensic debates were included in Commencement programs, often along with syllogistic disputations, at Philadelphia in 1759, King's College and the College of New Jersey in 1760, Yale in 1766, Harvard in 1769, Dartmouth in 1774, and Queen's College in 1788. By the close of the eighteenth century the forensic debate was in force in each of the colonial chartered colleges.

Another important educational change during this period was the admittance of foreign languages to the college curriculum and, subsequently, the somewhat different role of Latin and Greek. Several individuals were licensed to teach French as a semi-official college course at Harvard after 1720, and during the 1728–29 college year a French Club was formed to stimulate interest in French conversation. President Burr at the College of New Jersey brought in a French master for a brief period. The College of William and Mary employed Charles Bellini to teach French, Spanish, Italian, and German, King's College made a similar appointment in 1784, and in 1787 Harvard appointed Joseph Nancred as its first salaried instructor of French.¹³

Although both Harvard and Yale required conversation to be carried on in Latin in the colleges, there is some evidence that

these rules were not long enforced. Most instruction, however, was in Latin, and most of the textbooks used during the seventeenth century were in Latin. Hebrew was required of all Harvard students in the seventeenth century, but frequent references in the records to the difficulty of maintaining classes indicate that the subject was considerably less popular with the students than with the faculty. By 1723 Harvard required Hebrew only of those students who were preparing for the ministry; King's College adopted a similar ruling in 1755. Latin and Greek texts gradually came to be studied as models of rhetoric and eloquence rather than as manuals for other subjects. No one has attempted to compile a comprehensive list of eighteenth-century college textbooks, but the lists that do exist show a fairly consistent increase in the number of English language titles from about 1750.¹⁴

Many of the English language books were in science, a subject of persistent interest to the colonist but one that was admitted to the college curriculum with reluctance. One historian has suggested three stages in the development of American science: the formative period (1642–1723), the transition period (1723–45), and the established pattern (1745 to the end of the century).¹⁵ In the earliest period instruction was limited to readings from classical authors, usually through a compendium of medieval scientific lore such as Magirus' *Physiologiae Peripateticae*. President Henry Dunster compiled a system of geometry from a 1639 edition of La Ramée's *Arithmeticae* and presumably read it to his students. Astronomical observations were made after Governor Winthrop presented a telescope to the College in 1672, but the chief end of these morsels of science was to prepare students to learn the practical arts of surveying and navigation. It was with the establishment of the Hollis professorship of natural philosophy and mathematics that Harvard science gained academic respectability. At the College of William and Mary a professor of mathematics was a member of the faculty from 1711, but information is lacking on the courses he taught. Yale Rectors Pierson, Cutler, and Williams taught natural philosophy, based on seventeenth-century texts.

By about 1740 the separate disciplines of mathematics, chemistry, natural history, and geography began to emerge from the all-inclusive natural philosophy. John Ward's *Young Mathematician's Guide* (the standard college text at Harvard, Yale, the College of Philadelphia, and probably at Dartmouth and the College of Rhode Island) included arithmetic, algebra, geometry,

conic sections, the "arithmetic of infinites," and gauging. Mathematics at the College of Philadelphia under Theophilus Grew included the same subjects and additionally covered surveying and navigation. The College maintained a strong mathematical tradition throughout the century.

According to the testimony of one student, chemistry was studied privately at Harvard as early as 1644. Samuel Williams, the third Hollis professor, gave lectures on the chemistry of gases,¹⁶ but it was not until the establishment of the medical schools at the College of Philadelphia (1765), at King's College (1767), and at Harvard (1782) that chemistry appeared in the curriculum. These early professors were medical practitioners who taught chemistry to college students and *materia medica* to medical students. William Small, professor of natural philosophy and mathematics at the College of William and Mary, purchased chemical equipment for the College after his return to London in 1764, and Bishop James Madison made effective use of it in his courses from 1773. Princeton also had a professor of chemistry by 1796, but other colleges do not appear to have offered the subject to their students before 1800.

Biology remained an incidental part of courses in natural philosophy until 1756, when the curriculum of the College of Philadelphia allowed two months for the study of the "Natural History of Vegetables" and the "Natural History of Animals." In 1786 Adam Kuhn, who had studied under Linné, was appointed professor of *materia medica* and botany. The following year Benjamin Smith Barton, author of the first American textbook on botany, became the first resident teacher of botany and natural history in an American arts college. Benjamin Waterhouse served as lecturer on natural history at the College of Rhode Island during 1786-87, and at Harvard after 1788. His Harvard lectures covered plants, agriculture, animals, amphibia, fishes, insects, "the scale of Beings," man, the solar system, the nature of the earth, mineralogy, and a teleological conclusion.

Geography was limited to exercises in the use of maps and globes and to reading a compilation of geographical information. John Daniel Gros held the position of professor of German and geography at King's College as early as 1784, but the writings of Jedidiah Morse, who served briefly as a tutor at Yale in 1789, were the real beginnings of American geography. The development of geography as an academic discipline belongs to a later period.

The American colonists' interest in political matters was also

reflected in the college curricula, but the subject evolved slowly. The seventeenth-century courses in logic and ethics were believed sufficient to prepare students for their responsibilities to the state. Emphasis on subjects that would educate the student as a citizen initially came in extra-class influences rather than in curriculum changes. Thomas Clap included among the responsibilities of the college president the making of

publick Dissertations upon every Subject necessary to be understood to qualify young Gentlemen for those stations and Employments in civil life such as the Nature of civil Government, the civil Constitution of Great Britain, the various Kinds of Courts and Officers superior and inferior, the several Kinds of Laws by which the Kingdom is governed . . . the several forms of Ecclesiastical Government which have obtained in the Christian Church . . . that so every one educated here might have, at least, a general and superficial Knowledge of every important Affair of Life. . .¹⁷.

Political topics began to appear among the *quaestiones* for the Master's degree at Harvard by 1688, when Thomas Dudley defended the proposition that "Temporal Dominion was not founded on Grace." But it was in the decades immediately preceding the Revolution that topics relating to the authority of government, the rights of the people, the relations of states to a commonwealth, and others which reflected the temper of the times began to appear in the Commencement lists. The first announcement of King's College mentions geography, history, husbandry, commerce, and government among the subjects to be taught, while the College of Philadelphia plan of 1756 called for a first-year course that would give the student "a knowledge and a practical sense of his position as a man and a citizen . . . embracing ethics, natural and civil law, and an introduction to civil history, laws and government, and trade and commerce." Although the records of the other colleges are less specific, the course in moral philosophy offered at all colleges was considered an important one—it was usually taught by the president—and undoubtedly included much of what we would call politics and government. Francis Hutcheson's *Short Introduction to Moral Philosophy*, which was used at Philadelphia, King's College, and the College of Rhode Island, included the "doctrine of private rights, or the laws obtaining in natural liberty; Oeconomics, or the law and rights of the several members of a family, and Politics, shewing the various plans of civil government and the rights of state with respect to each other." At the College of New Jersey, John Witherspoon lectured on ethics, politics, and government, and he set an example of political leadership by serv-

ing in two provincial congresses and in the Continental Congress. The 1779 reorganization of the College of William and Mary called for a professor of "Law and Police" and added the "law of Nature and Nations" to the subjects taught by the professor of moral philosophy.

Thus, the curriculum of early American colleges was modeled closely after the seventeenth-century curriculum of Cambridge University. During the latter part of the eighteenth century, however, we see that the colleges began to deviate from the earlier pattern in several important ways. The tutorial system gave way to a faculty with teaching assignments by subjects; in methodology the syllogistic disputation was replaced by exercises with less rigid rules of procedure and a wider range of subjects; and modern foreign languages, science, and political education found a place in the college curriculum.

NOTES

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