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How Community Colleges Organize Knowledge To Be Learned

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Human beings have a strong proclivity to create categories to organize their understanding and communicate it to others. This organizing tendency holds true in education as one way of answering what should be taught and what students should learn. Educational classification systems have been compiled for thousands of years in the form of disciplines, content areas, subject matter, fields of study, programs, and, more recently, meta-majors. The simplest categorization may be reflected in the chorus of a 1907 song by Cobb and Edwards about young children playing on the school grounds:

> School days, school days,
> Dear old golden rule days,
> Readin' and writin' and 'rithmetic,
> Taught to the tune of the hick'ry stick,
> You were a Queen in calico,
> I was your bashful barefoot beau,
> And you wrote on my slate, I love you, Joe,
> When we were a couple of kids.

Reading, writing, and arithmetic were the general education (GE) core of learning as seen through the eyes of elementary school students and teachers.

Among the oldest categorizations of essential elements of higher learning are the *trivium* (grammar, logic, and rhetoric) and *quadrivium* (arithmetic, geometry, music, and astronomy) that formed the classic seven liberal arts of medieval universities. When Harvard University was established in the English colonies in 1636, it incorporated a strict classic core, including rhetoric and logic, ethics and politics, arithmetic, geometry, and later, algebra, astronomy, physics, metaphysics, and theology (Harvard Library, n.d.).

Harvard has remained a curricular touchstone, from its founding classic core to its introduction of the elective system that led to having only one required course—English composition (Mintz, 2020). Early reform of Harvard's core curriculum was led by 40-year-old President Charles Eliot who championed a radical, utilitarian "new education" beginning in 1869 that eliminated course requirements, expanded applied sciences and humanities, and

downplayed dead languages—all with a dogged eye toward preparing young men (for they were all men at that time) to meet the needs of a changing democratic society (Ali, 2019).

By the middle of the 20th century, Harvard's President James Conant led an egalitarian reform to attract students based on talent rather than wealth and entitlement. He commissioned a dozen faculty who worked two years to define a core, universal education for schools and colleges aimed at opening pathways to higher learning and advancing American democracy. *General Education in a Free Society: Report of the Harvard Committee,* known as *The Harvard Report of 1945,* has been reprinted over a dozen times in the last 75 years and characterized as "one of the most important documents in the history of American education in the 20th century" (Kravitz, 1994, p. 1). It is elegantly written and an essential read for anyone interested in general education because it reviews the overarching questions about democracy and the role of education in promoting an informed citizenry. Responding to the lessons of World War II, the Harvard Committee contended, "General education is the sole means by which communities can protect themselves from the ill effects of over rapid change" (p. 266). The *Harvard Report of 1945* called for three divisions of learning—humanities, social sciences, and natural sciences—forming the cornerstone of the Harvard College curriculum and setting a benchmark for higher education for decades.

Years later, the Association of American Colleges (AAC), now the American Association of Colleges and Universities (AAC&U), led a new national discussion about the essential higher education core. Their 1985 landmark report, *Integrity in the College Curriculum,* declared the curriculum to be adrift:

> As for what passes as a college curriculum almost anything goes. We have reached a point at which we are more confident about the length of a college education than its content and purpose. . . . The curriculum has given way to a marketplace philosophy: it is a supermarket where students are shoppers and professors are merchants of learning. (p. 2)

To counter the dominant anything-goes curricular approach, AAC recommended nine key components to frame an integrated whole curriculum: (1) inquiry, abstract logical thinking, and critical analysis; (2) literacy in writing, reading, speaking, and listening; (3) understanding numerical data; (4) historical consciousness; (5) science; (6) values; (7) art; (8) international and multicultural experiences; and (9) study in depth (Proctor, 1998, p. 194).

In the community college world, B. Lamar Johnson's 1952 *General Education in Action: A Report of the California Study of General Education in the Junior College* articulated a need for eight core areas that all GE programs should address: (1) psychology and personal adjustment; (2) health, physical education, and recreation; (3) family life education; (4) communication; (5) creative arts and humanities; (6) natural sciences and mathematics; (7) vocational courses; and (8) citizenship and social studies. These focus areas shifted with the turn of the 21st century, as noted in a study of 230 U.S. and Canadian two-year institutions that identified six areas "deemed essential for student success in the Knowledge Age that characterizes the new global economy" (Wilson et al., 2000, p. 18). These areas included communication, critical thinking/problem solving, technology literacy, mathematics, information management, collaboration/teamwork, and cultural/global studies.

Consideration of current essential student success skills has been relegated to the career education side of most community college houses or included in stand-alone college success

courses. Curiously, these are central among AAC&U's (n.d.) Essential Learning Outcomes framework that extols a broad-based liberal undergraduate education in preparing students for 21st century careers and citizenship—the central aim of general education writ large.

The Current Community College Curricular Reform Movement

In 2015, the community college world was upended by *Redesigning America's Community Colleges* (Bailey et al.), which distilled decades of data from the Community College Research Center. It zeroed in on the enduringly low and inequitable success rates in two-year colleges and the impotence of what the authors termed the cafeteria curriculum: "an array of often-disconnected courses, programs, and support services that students are expected to navigate mostly on their own" (p. 3). This publication crystalized criticism of the abysmal experiences of large numbers of community college students, especially low-income and students of color, and inspired a near-universal guided pathways movement in two-year colleges sustained by rising state-mandated reforms.

Currently, many two-year colleges across the U.S. are redesigning their programs of study, attending to the student experience, reducing or eliminating remedial courses, and showing promise in accelerating student achievement and closing equity gaps (Community College Research Center, 2021). The guided pathways approach calls for colleges to reorganize program offerings into career clusters rather than individual majors and to provide straightforward and highly supported pathways, or program maps, to graduation, transfer, and employment. Most institutions establish their own program groupings, with such titles as meta-majors, schools, career clusters, or academic and career pathways. In 2013, the Florida legislature required all 28 institutions in the Florida College System to adopt the following eight meta-majors: (1) Arts, Humanities, Communication and Design; (2) Business; (3) Education; (4) Health Sciences; (5) Industry/Manufacturing and Construction; (6) Public Safety; (7) Science, Technology, Engineering, and Mathematics; and (8) Social and Behavioral Sciences and Human Services (Florida College Access Network, 2013). In most institutions undertaking guided pathways reform, deeply inclusive conversations among faculty, staff, administrators, employers, and students are shaping the structure and direction of the changes underway.

A question left unanswered among these curricular reforms and new program groupings, and the one explored in this study, is to what extent there is any consensus in the community college world regarding how institutions organize subject matter they deem all students should learn. To understand such current practices in community colleges, we conducted a national analysis of how two-year colleges categorize essential knowledge.

Methodology

The study entailed a review of how community colleges organize their GE requirements from the most recent catalogs of a random sample of 30 community colleges and examination of these data using thematic analysis and descriptive statistics. The population from which we sampled was the listing of U.S. public two-year, associate degree-granting colleges (excluding specialized institutions designated as technical, tribal, and special focus institutions), identified by the Carnegie Classification of Institutions of Higher Education (CCIHE). We looked at subgroups of two-year colleges categorized by CCIHE as large/very large (FTE enrollment 5,000 or greater), medium (2,000-4,999 FTE), and small/very small (1,999 or fewer FTE).

Table 1 displays data showing the relationship between the percentage of large, medium, and small two-year colleges and the share of students across the country each group

serves, based on data from CCIHE (2018). By size, 14 percent of U.S. two-year colleges were classified as large or very large, 21 percent medium, and 65 percent small or very small. These proportions reverse in terms of how many students each group enrolled. Only one in seven institutions were classified as large or very large colleges, but they enrolled more than half of all community college students across the country. In contrast, small/very small colleges constituted nearly two-thirds of all two-year colleges but enrolled only 15 percent of the student population. Simply put, large community colleges across the country serve the bulk of two-year college students.

Table 1: Comparison of U.S. Two-Year Colleges and Student Enrollments by College Size

Institutions by Size	Proportion of U.S. Two-Year Colleges	Percentage of U.S. Student Enrollment
Large/Very Large	14%	56%
Medium	21%	29%
Small/Very Small	65%	15%

(Based on data from Carnegie Classification of Institutions of Higher Education, 2018)

For our study, we grouped institutions classified by Carnegie as large/very large and small/very small into two categories—large and small. To balance the number of institutions and their institutional impact on student populations, we chose a randomly stratified sample of 30 colleges evenly distributed across each of the three categories: 10 large, 10 medium, and 10 small public two-year colleges.

Findings

General Education Subject Matter Categories

We found great variation in how colleges named and grouped their subject area requirements and an assortment of GE typologies. Most colleges referred to disciplinary titles, but a few referred to lofty, overarching learning outcomes (e.g., skills and self-awareness to navigate and fully participate in a rapidly changing world with resilience and perseverance). Nearly half referenced detailed state mandated GE/core requirements or university GE transfer agreements.

Deconstructing the GE categories and their associated approved courses was the biggest hurdle to making comparisons across colleges. To create a structure for comparative analysis, we examined college GE groupings for patterns and applied theoretical templates from the literature and accrediting commissions as guides. Ultimately, most college GE requirements fell into five overarching categories with varying names, but the most common were: (1) Arts and Humanities, (2) Social and Behavioral Sciences, (3) Natural Sciences, (4) Communication and Composition, and (5) Mathematics.

The universally required GE competency area—which we ultimately labelled Communication and Composition—was variously called Communication, Communications, Writing, Composition, Fundamentals of Composition, Written Communications, Writing and Rhetoric, Written and Oral Communication, Communication Skills, Composition and Rhetoric, English

Communication, English Composition, English Composition/Writing, and English/Communications. In several colleges, this category also included subtopics of critical thinking, (e.g., English Language Communication, Critical Thinking, Language and Rationality, Analytical Thinking).

The Arts and Humanities category was sometimes named Fine Arts and Humanities or Humanities/Fine Arts. A few colleges called it simply Humanities but included arts courses in this group. Other variations included Arts and Letters; Humanities, Arts, and Design; and Humanities, Literature, and Fine Arts. About a third had separate categories for humanities and arts courses with specified requirements for each (e.g., one large southern college called for a course in Creative Arts and one in Language, Philosophy, and Culture). Overall, most used the title Arts and Humanities, or vice versa.

The area of Social and Behavioral Sciences was more consistently titled, with most using this specific nomenclature. Seven institutions referred to this category simply as Social Science or Social Sciences but included behavioral science courses. Many colleges also included courses in economics, history, political science, and government among options for this category, but nine colleges set aside History or History/Government as a separate category with its own set of requirements.

Natural Sciences was the most common designation for science requirements. Other variations were Natural and Physical Sciences, Life and Physical Sciences (or vice versa), Scientific Ways of Knowing, and simply Science.

Mathematics was the most consistently named category, with 25 of the 30 colleges using this title or the condensed Math. This GE group was otherwise titled Mathematical Ways of Knowing, Mathematics/Quantitative Reasoning, Quantitative Literacy, or Quantitative Reasoning. Three colleges listed Natural Sciences and Mathematics as a single GE category, but outlined specific math requirements within it.

A few colleges had GE categories other than these five major groupings. We clustered these following the patterns of where most colleges placed the same or similarly named courses. With much digging through course listings and descriptions, we found most colleges followed the same implicit GE subject area structure.

General Education Course Requirements and Offerings

When we examined community college GE programs by subject matter categories, we found colleges had very similar numbers of courses they required within each of the five major areas (Arts and Humanities, Social and Behavioral Sciences, Natural Sciences, Communication and Composition, and Mathematics), but major differences in the number of GE courses they offered to meet these requirements. Table 2 displays the average GE requirements and approved course offerings for each subject area category across colleges by size. All 30 colleges in the study required a single course in Mathematics and two or three courses, on average, in each of the other four GE subject area categories.

Table 2: Number of Required and Approved General Education Courses by Subject Areas at Large, Medium, and Small U.S. Community Colleges

General Education Subject Areas	Average Required GE Courses	Average # GE Course Options		
		Large Colleges	Medium Colleges	Small Colleges
Arts & Humanities	**3**	**63**	**72**	**29**
Social & Behavioral Sciences	**2**	**35**	**42**	**22**
Natural Sciences	**2**	**31**	**33**	**21**
Communication & Composition	**3**	**7**	**14**	**4**
Mathematics	**1**	**11***	**10***	**8***

(*Most course options in Mathematics required completion of other prerequisite mathematics courses.)

Colleges generally offered the most GE course options in Arts and Humanities and the least in Communication and Composition and Mathematics. On average, large- and medium-sized colleges offered about the same number of choices for each GE subject area, and significantly more in each category than did small colleges.

For each subject area, we found colleges of all sizes offering very high and very low numbers of GE course options. Interestingly, the highest number of course offerings for three of the subject categories were in medium-sized colleges. Overall, small colleges listed fewer GE course options. However, several small colleges in the study sample offered more GE courses than some large colleges. Clearly, institutional size was not the only determinant of the number of GE course options presented to students to meet GE requirements.

Arts and Humanities

The greatest number of GE course options were in Arts and Humanities, with as many as 167 choices for three required courses. Colleges required students to choose two or three courses in this area from an average of 55 alternatives. Large colleges approved 63, medium colleges approved 72, and small colleges approved 29 arts and humanities courses, on average.

Social and Behavioral Sciences

In Social and Behavioral Sciences, students had to complete one to three GE courses from an average of 33 options. Options ranged from 9 to 144 courses across all institutions. Eight of the 10 large colleges limited options to fewer than 31 courses in this area, but only three medium colleges had such parsimonious offerings. Six medium colleges and one small college approved over 50 social and behavioral science courses to meet a two-course requirement.

Natural Sciences

In the Natural Sciences group, colleges required students to choose two from a pool averaging 28 approved courses. We found smaller overall differences in course options in this GE area, with large colleges averaging 31 options, medium-sized colleges averaging 33, and small colleges averaging 21 courses. Overall, colleges listed as few as five and as many as 91 science courses to meet this requirement.

Communication and Composition

Despite a potpourri of terms for this subject area, Communication and Composition had the greatest curricular consensus among colleges, and students were offered little choice in this area. Community colleges across the country required two or three courses to be completed from a list of three to seven courses for this subject area. More than half the colleges offered students no choice of courses and required specific English composition/rhetoric or speech courses.

Mathematics

Consensus was also evident around Mathematics requirements. All 30 colleges listed one college-level math course as a graduation requirement, to be completed from an average of 10 possible courses. In practice, many students had only two or three options, since most courses on approved GE mathematics lists (e.g., Trigonometry, Calculus, Differential Equations) had prerequisites of other courses on the list. Several institutions simply stated the requirement as completion of a specific college-level mathematics course or higher.

Other General Education Categories and Requirements

Most colleges in the study had one or two GE requirements in varying subject areas outside the five they all shared. Nine colleges specified a separate History (or some combination of history/government/political science) requirement and called for one to two courses to be completed from four to eight approved options in that category. One institution asked for a course in Federal Government and one in Texas Government. One college named this category History-Cultures and included 33 course options in history, languages, culture, and religion.

The second most common "other" category was a grouping of humanities, social sciences, and specialized courses under headings variously dubbed Global Perspectives; Global Issues/Diversity; Culture, Diversity, and Equity; Multicultural Education; Diversity; or Human Relations. The disciplines included in these groupings varied, but all six colleges with this requirement called for one course from a list of 21 to 86 designated courses. Three others had a GE Diversity requirement but cross-referenced the approved courses for this area with other GE course listings, allowing for double counting across categories.

Four colleges required a course in Physical Education/Dance, Health and Physical Education, Exercise Science, or Wellness from lists of 34, 21, 45 and seven options, respectively. Four called for a specific student success course, variously named Student Success, College Transfer Success, or First-Year Experience. Three colleges specified a GE category for technology skills—Technology, Computer Skills, Computer/Statistics/Quantitative Applications—and required one course from a list of two to 11. One medium-sized college required a single course from a list of 31 to fulfill Lifelong Learning. One small college called for one course in Ethical Reasoning from a list of seven.

Summary of Findings

Across all 30 colleges in this study, we found strong agreement in the major disciplinary categories comprising their GE programs. Most community colleges required students to complete 12 GE courses: three in Arts and Humanities, two in Social and Behavioral Sciences, two in Natural Sciences, three in Communication and Composition, one in Mathematics, and one in an additional area (e.g., History, Diversity, Physical Education, Student Success, Technology, Lifelong Learning).

The greatest differences we found were in the array of approved GE course offerings—the number and variety of courses that colleges designated as options for meeting the five commonly held categories of knowledge. Depending on where they enrolled, students could encounter 49 or 491 courses to meet a 12-course GE requirement. Most college GE offerings were closer to the middle, with large and medium-sized institutions authorizing 192 and small colleges approving 102 GE courses, on average. Across the nation, community college students represented in this study selected 12 courses from an average 162 approved course options to meet their GE requirements.

Our study made it quite clear that community colleges share a strong consensus on the knowledge area framework for their GE programs—Arts and Humanities, Social and Behavioral Sciences, Natural Sciences, Communication and Composition, and Mathematics. Every college used these classifications with some variation in nomenclature. All restricted, and often specified, course options in Communication and Composition and Mathematics. This is as close as the colleges came to sharing a common core of learning. Seemingly, the common core that educators feel most comfortable requiring is still "readin' and writin' and 'rithmetic" (Cobb & Edwards, 1907).

A key observation from this study is that the contemporary community college is an institution of higher education that shares a great deal of agreement on the five categories used to organize the foundational knowledge students are expected to learn. Furthermore, in two of those categories, Communication and Composition and Mathematics, community colleges generally agree on specific courses students should take to attain these critical skills. If faculty across the country can reach agreement on five fundamental categories of knowledge and on the courses required in two of those categories, then it seems plausible for them to agree on the essential body of learning in the other three categories. At a minimum, bringing GE requirements into guided pathways discussions would signal a courageous, student-centered approach to making the critical knowledge deemed essential for all students more meaningful than checking 12 boxes from a list of 162 to get to the finish line. We hope the findings of this study will motivate faculty across the U.S. to consider creating a focused foundation of essential education—curated courses or certified learning experiences—that will greatly benefit their students, their advisors, and themselves as the guardians of what students should learn.

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