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ABSTRACT

This report provides both an overview and a detailed analysis of the general education core in the undergraduate curriculum in Virginia's colleges and universities. Sixty-eight campuses participated in the study, including all 15 public four-year institutions, all 24 public two-year institutions, 20 private not-for-profit institutions, and 9 for-profit institutions. The study is divided into two volumes. The first provides an overview of the report's findings, recommendations for improvements, and compares specific patterns at Virginia institutions with national norms. It is concluded that while Virginia institutions perform comparatively well, there is room for substantial improvement. The second volume, which comprises the study's detailed findings, is divided into five parts: part 1 examines the rationale for general education programs; part 2 describes the structure of general education programs; part 3 provides an analysis of course-taking patterns; part 4 addresses methods of assessment; and part 5 gives an overview of the process of change in the general education programs. (Contains 47 data tables.) (MDM)

General Education in Virginia: Assessment and Innovation

A Challenge to Academic Leadership

A Report by the Council of Higher Education of Virginia

July 1999

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Preface

The good news in the report which follows is that the Virginia institutions are actively engaged in the kinds of conversations about general education that are essential to the creation of a vital general education program and to the delivery of a high quality educational experience for students. While other studies, including the Virginia Association of Scholars report on general education at six public institutions, have been confined to reviewing course requirements contained in the institutions' catalogs, this study has undertaken to show what courses students actually take to fulfill their general education requirements. The resulting data reveal that, contrary to public assertions, most Virginia students do take a substantial amount of their general education in foundational courses in the core disciplinary areas, taken in common with other undergraduate students. The course-taking patterns that are here revealed thus constitute a kind of de facto *general education curriculum, representing the collective judgments of thousands of students concerning the kind of education they are seeking to secure their futures and to fulfill their educational aims. While this report is designed to provide a description of the state of general education in Virginia, we hope that it will stimulate continued conversations both inside and outside of higher education on the "proper" education for students in the Commonwealth of Virginia as we enter the 21st century.*

The question of what constitutes a proper education for youth has been a subject of concern and debate from ancient Greece to modern America. Thinkers like Plato, Aristotle, Jefferson, Newman, Dewey, and Meiklejohn have struggled with the appropriate subjects for study, the best methods for delivery, and the desired outcomes of such an education. This debate continues on a daily basis across America's higher education institutions. These discussions are most often focused on the component of the curriculum that is typically called "general education." Study in the disciplines is in many ways driven by the dictates of external professional/disciplinary organizations; in contrast, the campus owns general education, subject to at best cursory review from accrediting agencies.

While there are many national debates about the character that such programs should have, the campuses determine the particular ways in which they choose to constitute the "proper education" for their students. Thus the general education program is the central program by which a college or university can stake out a unique identity for itself and create a set of common intellectual experiences for its students. Contemporary general education programs either articulate an underlying philosophy of what constitutes an educated person (sometimes more implicitly than explicitly), as well as specifying goals, learning outcomes, and curricular structure, among other things, or represent an evolved, half-conscious continuation of earlier programs no longer well remembered.

Campuses generate general education programs to serve unique goals that faculties have deemed appropriate in order to fulfill their particular institutional missions. Collective agreement about the shape of this shared curriculum must be reexamined on a frequent basis to assure self-conscious educational practices. Reviews of these curricula tend to occur on an eight to ten year cycle to ensure that the faculty teaching them understand the goals for the overall general education curriculum and how the particular courses they teach address these goals. Thus the discussions about general education bring the campus community together to engage in important conversations about what in their particular context constitutes a "proper education." Strong general education programs provide the glue that cements the various faculties on a given campus together into a "true collegium" with shared values, missions, and purposes.

The document that follows this preface provides a complete if complex picture of the state of general education in Virginia. From a survey created by a committee (always a somewhat dangerous approach to collecting information), SCHEV crafted a document that wrestles a mound of information into a comprehensive picture describing, from a variety of vantage points, general education in Virginia. One early lesson learned in the efforts to assess the quality of higher education and achieve change in it was the power held by an accurate description of the curriculum.

Often the curriculum is invisible to the faculty immersed in its delivery. Descriptive assessment can surface a number of important issues, the solutions to which become obvious when faculty step back and look at the curriculum from the bigger picture that descriptive assessment provides. Indeed, several participants in this project have offered insights into the changes that have occurred in their programs based on what they learned through this effort.

For example, Norfolk State University reports that this study provided it with a fresh view of its existing general education curriculum, and stated that the survey will inform the design of the post-implementation reviews of its general education core. The survey gave Norfolk State a basis for comparison and, consequently, furthers efforts continuously to refine the general education curriculum in order to improve the foundational academic experience for all students.

The University of Virginia reports that the biggest thing it learned from the whole exercise was that – in spite of the fact that virtually all of its courses can qualify as general education courses – a reasonably small subset of courses (fewer than 200) constitutes the de facto general education courses taken by most of its students.

Radford University reports that it learned that it had too many general education courses, especially 300- and 400-level courses, some of which need to be examined for their fit with the purposes and goals of general education. After discussing this issue, Radford reduced the pool of courses in its general education

program from 350 to 193. It reports this as a significant step in creating a stronger focus and sense of purpose for the general education program. Radford also learned that its general education program needed a more focused assessment, one separate from other curricular assessment efforts. Radford decided to have general education undergo "program review" in the same way that other academic programs are assessed. This will engage faculty in an on-going review and study of the general education program aimed at achieving continuous improvement of the program.

The following report represents innumerable numbers of hours of SCHEV and campus staff time – developing the questionnaire, collecting the information, verifying its accuracy, sorting through databases, analyzing the voluminous amounts of materials submitted, writing drafts of the reports, receiving feedback from the campuses on the drafts, and reflecting on the best way to organize and present the information to the various publics with an interest in the state of general education in Virginia.

Each member of the Academic Affairs staff team made valuable contributions to this effort. Evelyn Baylor and Aris Bearse input data, crunched no end of numbers, and created tables. Carol Pfeiffer offered commentary and moral support to the work of her colleagues as she worked on several other writing projects. Belinda Anderson created drafts of text and provided interpretation of the numbers on various tables. In addition to writing chapters and analyzing data, Donna Brodd provided able leadership to this effort, keeping the project moving forward when making sense of all the "stuff" that had been collected seemed impossible. In particular, Laura Ford made unflagging and effective efforts at writing and rewriting the narrative text into a consistent style. A study committee of institutional representatives, who are listed in Appendix I, offered useful commentary and criticisms throughout the process.

Executive Summary

This study defines general education as that part of the undergraduate curriculum that introduces students to the common fund of knowledge with which college-educated persons should be familiar and/or equips them with skills to fill the various roles that contemporary society expects of college-educated persons. Its signal attribute is that it represents the principal - and often the only - common intellectual experience shared by graduates of a given college or university.

A total of 66 institutions (68 campuses) participated in one or more parts of this study, including all 15 public four-year institutions, all 24 public two-year institutions, 20 private not-for-profit institutions, and nine private for-profit institutions. The study is divided into two volumes. The first volume gives an overview of the report's findings and recommendations, and provides a historical and philosophical context for a discussion of how Virginia fares against the backdrop of the broader national scene of higher education. This volume concludes that Virginia fares reasonably well in the face of pervasive criticisms of general education. Virginia's institutions, especially in the public sector, have in several cases answered by anticipation many of the most damning criticisms, such as that which identifies a seemingly endless series of increasingly unrelated or over-specialized courses as fulfilling the very specific goals of a general education curriculum. In Virginia, however, we note some praiseworthy models of reform, systematically reducing the number of courses qualifying to fulfill requirements, at the same time as making the requirements themselves more intellectually defensible.

In the first volume, specific patterns at Virginia institutions are identified, and these are compared with national norms provided through the backdrop of published standards of national organizations, such as the Association of American Colleges and Universities and the American Academy of Liberal Education. These published standards were resolved into a set of criteria from which a matrix was derived in which to array Virginia institutions and to assess the extent of their accomplishment against the measure of these broadly recognized characteristics. Based on the results, it is concluded that Virginia institutions perform comparatively well but with room for substantial improvement.

The first volume also contains a series of recommendations for institutions and their Boards of Visitors to follow, in order to effect those improvements. These recommendations flow from broad assessment of the purposes of general education, as well as the specific performance of Virginia institutions. The historical roots of Virginia's commitment to higher education are examined as the basis of the study's working definition of general education. A brief version of the study's major conclusions follows.

The second volume, which comprises the study's detailed findings, is divided into five parts: Part One examines the rationale for general education programs; Part Two describes the structure of general education programs; Part Three provides an analysis of actual course-taking patterns of a cohort of students during the years 1993-1997; Part Four addresses the methods of assessment used to look at the results of general education programs; and Part Five gives an overview of the process of change in general education programs.

In Part One, we analyze the formal statements of the philosophy or rationale for general education at each institution. All but two institutions reported having such statements, and four overarching themes emerged from them:

Institutions want their general education programs to:

- provide foundational knowledge and basic skills to prepare the student to pursue a major and professional programs;
- enable the student to synthesize information and to make connections across disparate fields of study;
- form a basis for the student to become an informed and productive member of society; and
- inculcate in the student a desire to become an active, lifelong learner.

Only about one-third of the institutions reported having adopted a definition of an educated person, and these definitions were more likely to be implicit rather than explicit. Eight institutions supplied an explicit definition.

Among commonly articulated rationales for general education programs, most institutions chose "acquiring intellectual skills" to describe their general education programs. Other leading rationales were "developing social and civic competencies and values," "producing an educated citizenry," and "providing a foundation of learning." The private liberal arts colleges were more likely to choose "developing the habits of mind of a liberally educated person," while the public two-year institutions and the private for-profit institutions put more emphasis on "producing a versatile workforce."

Institutions of all types tend to view general education programs as providing breadth of learning in the undergraduate curriculum, while the major provides depth. Learning goals and objectives are generally derived from the statement of rationale for general education, and a majority of the institutions (57) reported that they have developed formal learning goals or objectives for their general education programs, although these vary widely in degrees of specificity. The average number of learning goals for all institutions was eight.

The traditional emphasis on what students *know* as a result of their general education experience has, in recent years, been supplemented by new emphasis on what students can *do* as a consequence of this experience. Most institutions

reported that their general education programs embrace both "content-oriented" and "skills-oriented" approaches. Half of all institutions reported that their learning goals are stated equally in terms of content knowledge and skill development, while a quarter place more emphasis on content knowledge and a quarter place more emphasis on skills development.

Institutions employ a variety of strategies to ensure that the learning goals of their general education programs are met. Among the most common are development of criteria for inclusion of individual courses in the general education program; a variety of special curricular features, such as capstone and honors courses; and initiatives to teach certain themes "across the curriculum" rather than in isolated courses. Writing is the theme most commonly taught "across the curriculum."

Part Two describes the structure of general education programs. The highest number of institutions described their structure as "a set of content-oriented areas with course options," while the next highest number selected "a common set of required courses." Slightly more than half of all institutions require a set number of credits in general education, with that set number averaging 46.5 among the public four-year institutions and 50 among the private not-for-profit institutions. The remainder has a range, depending on such factors as a student's prior achievements and the degree sought (B.A., B.S., B.F.A., etc.). Most institutions designed their general education programs to be completed in the first two years, with a few courses in the last two years.

All but three public four-year and four public two-year institutions reported that they require all students to take one or more courses in common. Writing is the most common course required of all students, followed by public speaking. The study includes lists of all courses required of all students by institution. However, far more common than required courses are course options in distributive areas of the curriculum. The study provides details of required credit hours by subject area at each institution, followed by a discussion of the institutions' 1997-98 requirements in five specific subject areas: writing, mathematics/quantitative analysis, foreign languages, history, and computer literacy/technology.

To assist students in moving through their studies in a way that ensures that they are adequately prepared for the course content, the college curriculum often uses two structural devices: a system of prerequisite courses that a student must take before being admitted to a higher-level course and a system in which there is a planned, published sequence of courses. This part of the study includes a detailed analysis of the extent to which there are hierarchical sequences of courses that students are expected to follow as part of the general education program. Also covered are the institutions' practices with respect to "placing out" of general education requirements, *i.e.,* allowing students to be excused from

taking certain courses because of prior study or attainment on placement examinations.

While Part Two of this study deals with possible choices, Part Three deals with actual choices. For the purposes of Part Three, each institution was asked to report which of its courses applied toward meeting general education requirements for students who entered in fall 1993. Then, a cohort of first-time freshman students was identified: those who entered in fall 1993, who had completed at least 90 credits (45 credits at two-year institutions) at the institution they entered, and who were enrolled through 1996-97. SCHEV's database of course enrollments tracks the course-taking patterns for that cohort of students, providing an overview of the general education experience of those students at each institution.

In order to define the parameters of student choice, this part of the study provides an institution-by-institution summary of the number of courses available in each of the institutionally defined categories for the general education program (*e.g.*, humanities, natural sciences, and social sciences). While at a few institutions the number of courses from which students may select is quite high, most institutions listed fewer than 20 courses in each category. Data presented in this part of the study show that few courses have large percentages of students enrolled in them.

This part of the study answers the question "what are the most common courses actually chosen by students?" by providing lists of the 50 most commonly enrolled general education courses taken by students at each institution and the percentage of students in the cohort who took each course. A list of 57 courses taken by more than 90% of the cohort at the respective institutions is provided.

This part of the study also answers the question "To what extent do students gain a common intellectual experience from their general education programs?" Using definitions of "high commonality" for courses taken by 70% or more of the cohort, "medium commonality" for courses taken by 50-69%, and "low commonality" for courses taken by 30-49%, the study describes a "*de facto* general education program" of courses taken by at least 30% of the students in the cohort. These students take more than 50 credit hours in such courses at a majority of the four-year institutions, both public and private.

This part of the study provides lists for each institution of the courses most commonly taken by the cohort in each of the general education categories defined by that institution, as well as the percentage of students who took each course. It also provides an overview of the four most commonly enrolled courses in each of the major subject areas of the general education curriculum: writing, mathematics, foreign languages, history, the natural and physical sciences, the social sciences, and the humanities.

Part Four focuses on assessment of the general education programs. This part builds upon the findings of Part One, where all but two institutions reported that they either already have or are in the process of developing learning goals for their general education programs. These goals, and the more specific learning objectives derived from them, provide the framework for assessment, which involves measuring a program's success in meeting expectations for student achievement. Effective assessment requires systematic gathering, analysis, and interpretation of data to determine how well performance matches expectations, as well as using the results to plan, implement, and monitor improvements in performance.

Virginia has been at the forefront of the national movement towards assessment of student achievement in general education. Following some unsuccessful early experiences with nationally normed examinations, institutions developed a multiplicity of approaches that collectively serve them well. This part of the study provides analysis of the range of institutions using each of several types of assessment methods: nationally developed programmatic methods, locally developed programmatic methods, course-specific methods, course grades, student-perception surveys, alumni-perception surveys, employer-perception surveys, portfolios, and others. Some methods are more appropriate than others for assessing learning in specific disciplines.

Because of the Council of Higher Education's emphasis on assessment, Virginia's public institutions have been well-positioned over the past decade as they have documented the "institutional effectiveness" criterion that must be met as part of the reaccreditation process of the Southern Association of Colleges and Schools. Assessment has been emphasized at the public institutions to a greater extent than at the private institutions. Multiple and often complex assessment techniques have provided valuable data for institutional decision making and resource allocations, and at several institutions these techniques have led to significant changes within the general education programs.

By focusing on the process of change in general education programs, Part Five illustrates that these programs are a dynamic rather than a static aspect of the curriculum at most institutions. At most institutions, general education programs undergo almost constant scrutiny and are the subject of frequent minor changes ("tinkering"), supplemented by periodic comprehensive reviews ("overhauls"). Whatever the current state of these programs, in the 1990s the cause is far less likely to be neglect than once might have been the case. This part of the study looks at how these programs are administered, how they are funded, the process for changing them, and the nature of changes made in recent years.

Every Virginia institution, public and private, has a mechanism for oversight and review of its general education curriculum, although the allocation of responsibility differs from institution to institution. This responsibility typically is shared between the faculty and the academic administration. Only one institution,

the Virginia Community College System, reported that its governing board was responsible for the general education curriculum. Although the oversight and review responsibilities for general education were similar at public and private not-for-profit institutions, differences emerged between the two types of institutions in whether or not funds were designated for the general education program and whether the institution had undertaken faculty development activities in support of general education. In both regards, the public institutions were more likely than their private counterparts to have supported general education in these concrete ways.

All of the public institutions and most of the private institutions have conducted a comprehensive review of their general education programs within the past decade. At both types of institutions, academic administrators and curriculum committees were most often the initiators of comprehensive reviews. A majority of institutions reported that the review process was always lengthy, often difficult, and usually involved multiple constituencies. Looking to the future, nearly all institutions, public and private, reported that comprehensive reviews were either underway or about to begin.

Institutions attributed this heightened scrutiny and increased frequency of comprehensive reviews, at least in part, to dissatisfaction with the overall state of general education. When asked what specific issues motivated the last reviews, the strongest motivating factor for four-year institutions, both public and private, was "broad concerns about the general education program." Other frequently checked responses were a "perceived incoherence in the former general education program," a "need to improve students' skills in writing and mathematics," "changes in pedagogy," "a desire to provide less choice for students" (thus resulting in a more structured curriculum), and a "desire to better prepare students for the workforce." No institution cited a desire to increase student choice as a factor in either the last or the upcoming comprehensive review.

At the public four-year institutions, recent general education reforms typically resulted in an increase in structure or coherence and a decrease in student choice. Other major reforms included the development of competencies or proficiencies that are expected of all students and an increased emphasis on writing and computer skills.

VOLUME ONE – OVERVIEW

Historically, discussions about general education achieve traction precisely where they engage discussions regarding the prospects of democratic or republican life. That holds true throughout the history of the Commonwealth. It remains true in recent times, when practices in general education throughout the United States have been the subject of pervasive critique and profound skepticism.

Every academic calendar produces new and dramatic examples of this debate. Currently, the University of Chicago lies beneath the microscope of inspection, as a result of a thirty-year trend of changing core requirements and a pending renovation. A year ago City College underwent the same inspection, eventuating in a retrenchment from a plan to broaden requirements. At Chicago as elsewhere, the overriding question has been the departure from a sharply defined focus on the achievements of western civilization in favor of standards loosely understood as multicultural. At the core of the debate we find far less an ideological stand-off between defenders of one culture versus defenders of plural cultures than a fundamental misunderstanding of the contents of the previous curricula and the intellectual justification of the newer standards.

The newer standards pose a challenge to a supposed "canon" of sources believed to be rather narrow in their focus. In fact, however, the fundamental rationale for the focus on western culture has been its origin in the true original of multiculturalism. It has historically been western science and western civilization that have systematically advanced the goal of a broad understanding of humanity – as opposed to any particular culture – as the measure of intellectual progress. To that extent, a shift away from western culture toward multiculturalism is in fact a contradiction in terms.

The survey that produced the present study was purely descriptive and does not permit a sensitive judgment about the level of intellectual command applying to this dilemma within Virginia colleges and universities. Nevertheless, some dimensions and tendencies have been revealed, and these afford sufficient opportunity to speak to the question of the strength of our institutions' general education programs. A more in- depth appreciation could emerge only from consideration of deliberate expressions by academic leadership about their understandings of the curricula. For all of that, however, we are still able to say something about how Virginia fares against the backdrop of the broader national portrait.

On the basis of a comparative assessment Virginia fares reasonably well in the context of this pervasive criticism. That is to say, our institutions, especially our public institutions, have in several cases answered by anticipation many of the most damning criticisms (which ought to be taken seriously rather than defensively dismissed). For example, perhaps no criticism of practices in general education is more persuasive than that which identifies a seemingly endless series of

increasingly unrelated or over-specialized courses as fulfilling the very specific goals of a general education curriculum.

In Virginia, however, some of our institutions provide praiseworthy models of reform, systematically reducing the number of courses qualifying to fulfill requirements, at the same time as making the requirements themselves more intellectually defensible. Mary Washington College offers a powerful example of this process, and James Madison University performs near to the same level. Virginia Polytechnic only recently added U. S. History to its list of required competencies. Had Virginia already arrived at a policy of true reward for superior performance, these institutions would surely have been recognized for their efforts.

A large measure of the responsibility for these accomplishments falls to the nearly decade-old restructuring and assessment initiatives in Virginia. Those initiatives directed our institutions to turn a useful attention toward core practices and goals, with the helpful consequence of thoughtful reforms generated on the ground by the very folk who were nearest and best informed.

General education programs in Virginia's colleges and universities, like the institutions themselves, are diverse in their structures and requirements. While no one pattern describes all the programs, Virginia's general education programs may be arrayed as follows:

- All public institutions and 20 private not-for-profit institutions participated in the study.

- Virginia's institutions care deeply about their general education programs;

- Institutions view their general education programs as providing breadth of learning; depth of learning comes from the major, not general education.

- Twelve of the 15 public senior institutions and 15 of 17 reporting private not for profit (NFP) institutions require students to take at least one course in common. English composition is the most commonly required such course.

- Across the state, approximately 40% of the typical 120-credit degree program comprises general education courses; the percentage is slightly higher in private (42%) than in public institutions (39%).

- Five public senior institutions and six of the 18 reporting private NFP institutions require all students to gain competency in a foreign language at the intermediate level; six public senior institutions and nine private NFP institutions do not require their students to gain competency in a foreign language.

- Although some institutions allow students great latitude in the choice of courses, at most institutions students select from fewer than 20 courses in most

general education categories (e.g., mathematics, English). The majority of institutions allow the greatest latitude in the choice of humanities and social sciences courses.

- At six public senior and nine of the 15 reporting private NFP institutions, at least 50% of the cohort took 25 or more credits in common, providing shared intellectual experiences for the students enrolled in them.

- Several institutions, particularly those in the state's two-year public colleges, have addressed technology competency through their general education programs.

- The public institutions, in particular, provide on-going administrative and financial support for their general education programs.

- The course-taking patterns for a cohort of 1993 entering students show that a majority of the cohort selected from a limited number of foundational courses.

- The public institutions, in particular, have been "ahead of the curve" in the national trend toward increasing the structure and limiting student choice in their general education programs.

- Some of the revisions in the general education programs within the last decade are attributable to the Council's early focus on assessment.

These Virginia patterns may be appraised against the backdrop of general standards promulgated by national bodies. We derive from the American Academy for Liberal Education (AALE) and the Association of American Colleges and Universities (previously, Association of American Colleges – AAC) general best practices in general education. These published criteria (twelve standards in each case) emphasize not only subject or content areas but also the goals and management principles appropriate to general education.

AALE emphasizes that the "mission statement reflects the importance and centrality of liberal education and states the institution's purposes and goals in a manner that corresponds to the way in which its curriculum is actually organized and taught" (Standard One). Standards Two and Three require that the "importance of teaching [be] featured, supported, and rewarded in the life of the institution or program" and that "liberty of thought and freedom of speech [be] supported and protected, bound only by such rules of civility and order as to facilitate intellectual inquiry and the search for truth."

"The general education requirement ensures a basic knowledge of mathematics and the physical and biological sciences, including laboratory experience, intermediate knowledge of at least one foreign language, and the study of literature and literary classics, the political, philosophical and cultural history of Western

civilization, and the foundations and principles of American society. Variations from this norm are allowable in cases where the outstanding character of other elements of the general education program assures substantial compliance with these standards" (Standard Four).

"The curriculum's prerequisite structure, as defined and enforced, insures an orderly progression from elementary to advanced levels of knowledge, and the course definitions in the catalogue distinguish clearly among those considered fundamental (either to a general education or to mastery of a major), those less so, and those that belong to specialized subjects" (Standard Five).

The remaining AALE standards provide that the "baccalaureate requirements in the liberal arts and sciences call for not less than a third of the student's course work to be taken within the general education requirement" (Standard Six), that "the institution defines and enforces academic entrance requirements that prepare students to take the required college-level general education courses" (Standard Seven), and that "a student writes substantial essays during every stage of progress as an undergraduate, and thereby demonstrates a proficiency in written English" (Standard Eight). Moreover, "the institution evaluates student progress in learning the elements of general education" taught under Standard Four, and "ascertains how well it meets the educational goals it has set for itself, either by means of a general examination or some academic equivalent" (Standard Nine).

General education courses are taught by "regular faculty members, including senior ones," and they "are regularly engaged in academic counseling" (Standard Ten). "Class size is appropriate to subject matter, level of instruction, and need for class discussion" (Standard Eleven), and "the library and other information resources are adequate to the demands of its programs" (Standard Twelve).

AAC principles focus more on process and articulation than on content, providing that "strong general education programs explicitly answer the question, "What is the point of general education?" (Principle One) and "embody institutional mission" (Principle Two). Such programs "continually strive for educational coherence" (Principle Three) and "are self-consciously value-based and teach social responsibility" (Principle Four). They "attend carefully to student experience" (Principle Five), "are consciously designed so that they will continue to evolve" (Principle Six), and "require and foster academic community" (Principle Seven).

"Strong general education programs have strong faculty and administrative leadership" (Principle Eight) and "cultivate substantial and enduring support from multiple constituencies" (Principle Nine). These "programs ensure continuing support for faculty, especially as they engage in dialogues across academic specialties" (Principle Ten), "reach beyond the classroom to the broad range of student co-curricular experiences" (Principle Eleven), and "assess and monitor

progress toward an evolving vision through ongoing self-reflection" (Principle Twelve).

These standards and principles may be substantially resolved into a set of criteria from which we can derive a matrix in which to array Virginia's institutions and assess the extent of their accomplishment against the measure of these broadly recognized characteristics. Our appraisal would integrate the AALE standards and AAC principles under the general rubrics:

1. Rationale/mission
2. Clarity of goals
3. Specification of objectives
4. Definition of an educated person
5. Criteria for general education courses
6. Requires at least 40/120 credits in general education
7. Requires that all students gain competency in
    a) writing
    b) mathematics
    c) oral communication
    d) natural or physical science
    e) social science
    f) humanities/literature
    g) foreign language through the intermediate level
    h) history (including United States history)
8. Requires that students take writing-intensive courses beyond those of first-year composition
9. A system of prerequisites ensures a progression from beginning to more advanced levels of knowledge
10. Assesses and monitors student attainment of expected general education outcomes
11. Sets an expectation of common intellectual experiences within the general education program of at least 15 or more credits (3-credit courses) for all students
12. Involves faculty and administrative leadership in the change process for general education programs
13. Provides financial support for general education programs
14. Appropriate class size, at least in commonality courses
15. Requires that students meet entrance standards that prepare students to take college-level general education courses

Within the limited context of results of our survey, we have developed the following matrices to portray the performance of Virginia's colleges and universities. While the parameters of our survey do not permit us to assess all of the AALE standards and AAC principles, nor even all of the 15 characteristics

listed above, the matrices do contain detailed information concerning which institutions meet the first 13 or the 15 characteristics. A similar report on the institutions' performance on the last two characteristics is beyond the scope of this study.

Based on the survey and associated spreadsheets submitted to SCHEV as part of its study of general education, the following matrices identify the institutions that appear to meet each recommended characteristic as of July 1998.

Table 1:1: Public institutions that meet recommended characteristics

Characteristic/Institution	CNU	CVC	CWM	GMU	JMU	LWC	MWC	NSU	ODU	RU	UVA	VCU	VMI	VPI	VSU	RBC	VCCS*
1. Rationale	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2. Goals	X	X	X	P	X	X	X	X	X	X	X	X	X	X	X	X	X
3. Objectives	X	X	X		X					X		X		X	X		
4. Definition educated person	X	X	X	X	X	X	X	X					X	X	X		
5. Criteria for courses in GE	X	X	X	X	X	X	X	X	X	X	X	X		X	X		
6. 40 + credits for all students	X	X	X		X		X	X	X	P	X		X		X	X	X
7a. Writing	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
7b. Mathematics	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X
7c. Oral communication			X	X	X	X			X	X			X	X		X	X
7d. Natural or phys science w lab	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X
7e. Social science	X	X	X	X	X	X	X	X	X	X	X				X	X	X
7f. Humanities/literature	X	X	X	X	X	X	X	X	X	X		X			X	X	X
7g. Foreign language - 2nd year			X	X			X				X						
7h. History (including U.S. history)	X	X	X			X	X	X	X	X	X		X				
8. Writing beyond 1st year		X	X	X		X	X					X	X	X	X	X	
9. > 50% prerequisites & sequences	X	X			X		X		X	X		X	X	X		X	X
10. Assessment-multiple methods**	X	X	X	X	X	X		X	X	X	NR	NR		X	X	X	X
11. Commonality courses***	X	X		X	X	X	X	X	X	X			X		X	X	X
12. Faculty lead change process	X		X		X	X	X	X	X	X	X	X	X	X	X	X	X
13. Financial support	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Number of recommended characteristics met	17	17	18	14	17	16	17	15	16	16	10	10	14	14	16	15	14

Note: X means the characteristic has been met. P means the institution is in progress of developing the characteristic. NR means not reported.

* The characteristics marked for the Virginia Community College System are for VCCS transfer-oriented programs only.

** In order to qualify for using multiple methods of assessment, institutions needed to use at least three methods other than course grades.

*** For the purpose of this matrix, institutions were considered to have met the standard if students took 15 or more credits in high or medium commonality courses

Table 1:2: Private not-for-profit institutions that meet recommended characteristics

Characteristic/Institution	AC	BWC	CHS	EMU	E&H	HSC	HOL	LU	LYC	MBC	MU	RMC	RMWC	SPC	SBC	UR	VIC	W&L
1. Rationale	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2. Goals	X	X	X	X	X	X	P	X	X	X	X	X	X	X	X	X	P	X
3. Objectives		P							X			X			P			X
4. Definition educated person		X	X			X				X	X		X	X	P	X		
5. Criteria for courses in GE	X	X								X					X	X		X
6. 40 + credits for all students		X		X		X		X	X	X	X	X	X	X	X	X	X	X
7a. Writing	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
7b. Mathematics	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	
7c. Oral communication		X		X	X			X		X		X		X	X	X	X	
7d. Natural or phys science w lab	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7e. Social science	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
7f. Humanities/literature	X	X	X		X	X		X	X		X	X	X	X	X	X	X	X
7g. Foreign language - 2nd year						X			X			X			X	X		X
7h. History (including U.S. history)	X	X				X		X	X		X	X	X	X		X	X	X
8. Writing beyond 1st year	X									X	X			X	X	X	X	X
9. > 50% prerequisites & sequences	X	X	X		NR	X	X	X		NR	X	X	X	X	X	X	NR	NR
10. Assessment -multiple methods*	X	X	X		NR				NR	NR		NR				X	NR	NR
11. Commonality courses**	X	X	NR		NR	X		X	X	NR	X	X		X			NR	NR
12. Faculty lead change process	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X
13. Financial support		X	X		X	X			X	X	X	X		X	X	X		
Number of recommended characteristics met	14	17	12	9	10	14	7	13	14	13	15	15	12	16	13	18	11	11

Note: X means the characteristic has been met. P means the institution is in progress in developing the characteristic. NR means not reported.

* In order to qualify for using multiple methods of assessment, institutions needed to use at least three methods other than course grades.

** For the purpose of this matrix, institutions were considered to have met the standard if students took 15 or more credits in high or medium commonality courses

Source: State Council of Higher Education for Virginia General education study, 1998-1999

Based on these results we may conclude that Virginia institutions perform comparatively well but with room for substantial improvement. Informed observers would offer the following specific recommendations concerning general education requirements:

Institutions and their Boards of Visitors, if they haven't already done so, should:

- state and make widely known across campus the rationale and student learning goals for their general education programs;
- define what they mean by an educated person;
- define strategies to meet their student learning goals;
- require their students to complete at least 40 credits in general education;
- set criteria that determine which courses are appropriate for general education, and periodically review those courses to determine if they continue to meet the goals of the general education program;
- require that all students gain competency in writing, oral communication, mathematics, natural or physical sciences, social sciences, foreign languages (through the intermediate level), humanities, and history (including US history), in ways that best meet institutional curricular rationales and designs;
- provide funds for faculty development related to general education programs;
- develop mechanisms for faculty oversight, periodic review, and revision;
- develop ways to strengthen faculty ownership of the general education program or courses within it;
- use multiple methods to assess their programs and use data gathered to improve them;
- insure that class size is appropriate to subject mater, level of instruction, and the need for class discussion; and
- request periodic reports on how well students meet the general education goal set by the institution.

Within these general guidelines, faculty should design their general education curricula in ways that best fit their institutions' histories and missions and also serve the public good. A few institutions presently meet these criteria almost completely, among them Clinch Valley College, the College of William and Mary, Christopher Newport University, James Madison University, Longwood College, Mary Washington College, Old Dominion University, Mary Baldwin College, Saint Paul's College, and the University of Richmond.

These recommendations flow from broad assessment of the purposes of general education as well as the specific performance of Virginia institutions. To maintain a clear focus on the purpose of these recommendations and the aims of general education, however, it will not be amiss further to situate our concerns in the context of the historical developments that drive this discussion. After doing that we will set forth more specifically Virginia's accomplishments and pinpoint areas in which there remains ample room for improvement. Finally, we identify what seem to be the appropriate paths and forums of reform.

DEFINITION OF GENERAL EDUCATION

To identify or define the goals of general education, we would do well to test how far we understand the first formulations of it in the official annals of the Commonwealth.

The State first attained the level of official and coherent expression of public goals in this regard in the "Report of the Commissioners for the University of Virginia" of 1818. That report is most helpful, but we may usefully turn first to the elaboration that followed the report, when the "Rector and Visitors," established as a consequence of the report, petitioned the Congress of the United States to eliminate the tariff duty on the importation of books. For in that petition they signal still more forcefully the range of subjects in which they thought it appropriate to offer general instruction.

> That the Commonwealth of Virginia has thought proper lately to establish an University, for instruction generally in all the useful branches of science... That the difficulty resulting from this mode of procuring books of the first order in the sciences, and in foreign languages, ancient and modern, is an unfair impediment to the American student, who, for want of these aids, already possessed or easily procurable in all countries except our own, enters on his course with very unequal means, with wants unknown to his foreign competitors, and often with that imperfect result which subjects us to reproaches not unfelt by minds alive to the honor and mortified sensibilities of their country. That the value of science to a republican people, the security it gives to liberty, by enlightening the minds of its citizens, the protection it affords against foreign power, the virtues it inculcates, the just emulation of the distinction it confers on nations foremost in it – in short, its identification with power, morals, order, and happiness... are topics which your petitioners do not permit themselves to urge on the wisdom of Congress, before whose minds these considerations are already present, and bearing with their just weight.

We find in the appeal three useful indices:

- First, comparative assessment of the standards of general education with reference to the attainments of those thought most advanced;
- Second, the public good expected to be realized from general education at the highest level; and,
- Third, the voice of a lay leadership that lays out the goals publicly identified and pursued.

That the fruits of general education may be expressed as "power, morals, order, and happiness" may appear less than intuitive to us, for we typically express the goals of general education in reference to individual rather than corporate attainments. But the "Report of the Commissioners" makes clear that, while education in itself targets the individual, it aims at the public good.

The first indication of this emerges in the consideration that the commissioners carefully distinguished the ends of general education at the higher level from the ends of education in general. Also known as the "Rockfish Gap" report, it distinguishes "primary" and "higher" education. The former provides for the citizen who "observes with intelligence and faithfulness all the social relations under which he shall be placed." Accordingly, it called for instructing "the mass of our citizens in [their] rights, interests and duties, as men and citizens." Wherefore one learns "to calculate, to communicate ideas, contents, accounts, and writing, to improve moral faculties (by reading), to observe duties to neighbors and country, to know his rights, and to choose wisely the delegates to represent him." This is the standard of lower or "primary" education. It is notable that, today, we often hear similar recitations describing higher education.

What lay beyond this standard in the "Rockfish Gap" report was the goal "to form the statesmen, legislators, and judges on whom prosperity and individual happiness are so much to depend." Students educated to this higher level were "to expound the principles and structures of government, the laws which regulate the intercourse of nations, those formed municipally for our own government, and a sound spirit of legislation." People so educated would "harmonize and promote the interests of agriculture, manufacture, and commerce." They would, moreover, "develop the reasoning faculties of our youth, enlarge their minds, cultivate their morals." They would "enlighten them with mathematical and physical science, which advance the arts, and administer to the health, the subsistence, and comforts of life; and generally, to form the habits of reflection and correct action..."

Thus, we see elucidated a series of professions directly to be prepared by general education at the higher level. Those professions entail law, agriculture, industry, commerce, and, most emphatically, teaching. In short, the end of general education at the higher level is to provide for education and support at the primary level. The goals announced for primary education will be attained only in proportion as advanced goals are attained in higher education. General education in higher education is the cement that makes possible a credible primary or pre-collegiate education that will, in turn, assure the development of able republican citizens who will act with intelligence and faithfulness.

Not the lesser goal of cultural familiarity but the noble goal of ability to direct and form culture was the aim of general education as originally described in the official declarations of the Commonwealth of Virginia.

Much has changed since that time, including the development of an official goal of providing higher education for virtually all citizens of Virginia. That may well require us to revisit the definition of general education.

Heretofore, however, we have done so only silently, accepting a tacit restatement that likens the goal of college and university education to what was previously envisioned as the goal of primary education. That may be a reasonable course to follow where ideals of access to higher education render less tenable the expectation that higher education will systematically produce "statesmen, legislators, and judges." But two questions must flow from such a conclusion.

First, is there a successor to the former higher education, which will provide assurance of the ability to provide the newly defined primary education?

Second, do we adhere even to the more modest version of general education in our colleges and universities today?

GENERAL EDUCATION IN VIRGINIA'S COLLEGES AND UNIVERSITIES

Perhaps the most shocking thing a commentator could say about prevailing practices in general education in colleges and universities today, whether in Virginia or elsewhere in the United States, is that a tariff duty on foreign books would scarcely cause a ripple in our general education curricula. The pattern of offerings we discover upon review reveals little opportunity for comparative assessment with reference to the attainments of those thought most advanced.

To our credit we may say that American scholarship today is as frequently the intellectual standard as foreign scholarship. To our discredit there is little evidence that general education curricula foster much familiarity with cutting edges in scholarship, whether American or foreign.

To take the most obvious case, nowhere does there exist any general education curriculum in which the study of foreign language can be expected to foster anything more than a tourist's gloss on a foreign language. To be sure, many a foreign language major will have discovered an interest awakening in an elementary language course intended initially only to satisfy a general education requirement. That is something gained. The intensive study of foreign languages, however, is not a growth industry in the academy in general or in Virginia in particular.

Moreover, the evolution of general education courses as mainly the most general, introductory study preparatory to initiating specialized study in a major strengthens the presumption that there is no intrinsic virtue to general education itself – it is a means to the end of specialization more often than it is a substantive contribution to a student's understanding. Instruction in mathematics, like that in foreign languages, illustrates this ably also; indeed, a pervasive practice has emerged that isolates the handful of eventual majors in mathematics from all other students, who seldom acquire more than a sprinkling under showers effectively labeled "mathematics for the unfamiliar."

While the Council of Higher Education's report on general education highlights a few notable successes in Virginia, in which we take great pride, it remains true that the general picture of the American academy remains true of Virginia higher education also. As we review some of the particular findings, it will be important to keep these observations in mind, for they constitute the meaning behind the course titles.

The guiding question in assessing general education is not how comprehensive is the list of offerings at a college or university. It is far rather, how effective an analyst of the structures of government the mathematics major is and how effective an analyst of mathematics is the political science major?

As we shall see, we cannot take much encouragement about the answers to those questions from the results we have obtained. The importance of this stems from the fact that we read our results in light of the requirement that general education produce, not proficient specialists, but rather "intelligent and faithful citizens" and, to the extent possible, "statesmen, legislators, and judges." It belongs to another forum to discuss why it is insufficient to think of "statesmen, legislators, and judges" as merely proficient specialists.

DESCRIPTION OF GENERAL EDUCATION PROGRAMS

The study by the Council of Higher Education describes five aspects of general education programs in Virginia.

1) A brief discussion of the "rationales for general education programs" conveys the declared or explicit goals of the general education programs on our campuses in the context of accreditation standards that mandate a minimum number of credits drawn from three broad areas, "humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics."

2) The "structure of general-education programs" details the explicit requirements on each of our campuses.

3) The "actual course-taking patterns for 1993-97" reveal the specific accomplishments of the cohort of undergraduates that entered our institutions in 1993.

4) The discussion of "assessment of general education programs" narrates the efforts of our campuses to maintain adequate curricula.

5) "The process of change in general education programs" relates to the progress of campus oversight in general education.

1) RATIONALES FOR GENERAL EDUCATION PROGRAMS

Our review of the "rationales" for our general education programs isolates four overarching themes:

- To provide foundational knowledge and basic skills to prepare the student to pursue major and professional programs;
- To enable the student to synthesize information and to make connections across disparate fields of study;
- To form a basis for the student to become an informed and productive member of society; and
- To inculcate a desire to become an active, lifelong learner.

These themes characterize in some degree all of the curricula at our public and private institutions. They vary in details and clarity, but the most important factor is that all make an explicit and public commitment to attain such objectives. In the process, some though not many draw the necessary implication, defining a conception of the "educated person." Thirty-three percent of the public institutions and seventeen percent of the private institutions offered an explicit definition.

Virginia Polytechnic Institute's formulation illustrates the range of concerns often conveyed in these definitions:

> As we move into the 21st century, both continuity and change are required in higher education.

> On the one hand, we must continue to foster vital links with our common cultural heritage and to inculcate crucial intellectual skills.
>
> On the other hand, the contemporary world presents a number of critical issues with which every society must grapple.
>
> Educated citizens in the years ahead must be able to react creatively to cultural, racial, and gender-based diversity, and to cope effectively with problems and potentialities stemming from such elements as technological advances and environmental crises.

While the varying definitions convey quite well the range and variability of conceptions of the educated person current on campuses today, the most important aspect of this phenomenon is the invitation to the public to review the stated aims and understandings of college or university leaders.

It is a truism that our institutions must be able to articulate their aims to lay audiences in order to compel attention and support for their missions. The analysis at the surface level of the published statements of our institutions constitutes a uniquely valuable level of analysis specifically because it does signify the willingness to engage in an act of public responsibility or accountability. In that sense, the numerous public criticisms of general education programs (such as that of the Virginia Association of Scholars) that have emerged on the strength of reviewing catalog statements of requirements also possess a unique value.

At the same time, the institutions often communicate tacit or underlying rationales. These tend to lengthen the listings of desirable attributes resulting from education and, consequently, the goals of general education programs.

The table on the following page illustrates how our institutions responded with respect to a survey of their tacit objectives.

Table 1:3: Rationales for General Education Programs

	Public 4-year (N = 15)	Public 2-year (N = 24)	Private not-for-profit (N = 18)	Private for-profit (N = 7)	All institutions (N = 64)
Acquiring intellectual skills	15	23	18	6	62
Developing social and civic competencies and values	15	22	13	6	56
Producing an educated citizenry	15	21	13	6	55
Providing a foundation of learning	13	21	15	6	55
Developing habits of mind of a liberally educated person	14	17	17	4	52
Producing a versatile workforce	14	20	8	7	49
Integrating learning	11	18	14	6	49
Learning more about oneself	13	18	9	6	46
Transmitting cultural heritage/values	12	19	14	0	45
Cultivating personal fulfillment	13	18	11	2	44
Sampling a variety of fields	12	14	12	1	39
Creating a learning community	11	14	9	4	38
Supplementing concentration	9	11	9	2	31

This survey demonstrates substantial similarity across categories of institutions in the relative importance attached to these various rationales for general education. It also illustrates the likelihood of substantial diversity in the range of offerings that would respond to such goals.

We shall see that it is no accident that critics from all perspectives often have the sense today that general education curricula have no glue that holds them together. We may now see that a powerful reason for that is an extraordinary growth in the number of concerns – concomitant with the explosive growth in higher education in general – that colleges and universities seek to meet

within the finite limits of relatively few courses or credit hours available for the purposes of general education.

Our study also reveals the effect of trying to attain the competing objectives of "breadth and depth" in general education courses. Our institutions more frequently reserve the forum of general education for breadth explorations, while seeking to build depth of understanding in the major. That represents a movement toward trying to satisfy these competing objectives in the context of preserving adequate opportunity for the two pillars of baccalaureate education – namely, general education that students should, in principle, enjoy in common, and the special preparation for further study or careers hived off for majors or concentrations. Our analysis, we shall see shortly, strongly suggests that the specialized courses of study play a significant role in orienting the pattern of general education course taking, such that students slip at earlier and earlier stages of their study into their intended concentrations.

The significance of the last observation is that it raises some question as to how successfully the institutions pursue the learning objectives specified for general education. Most of our institutions do specify learning objectives, though a few do not.

Radford University offers a comprehensive account of learning objectives, designating six general goals and 34 specific goals for the eight clusters or disciplinary areas. The general goals are:

- Think clearly and creatively about ideas, issues, and texts both within and across academic disciplines.
- Raise relevant and insightful questions within and across academic disciplines.
- Construct logical and persuasive arguments.
- Employ a variety of research methods and styles of inquiry.
- Use appropriate computer technologies to gather and organize information, to solve problems, and to communicate ideas.
- Work with others in a shared process of inquiry and problem-solving.

In the Physical and Natural Sciences cluster, by way of illustration, the specific goals are:

- Comprehend the empirical nature of science.
- Identify scientific problems and apply scientific methods.
- Extend scientific problem-solving skills to a variety of situations.
- Relate the basic principles of science to the world at large.
- Understand the relations between science, technology, and society.

Further, the identification of learning objectives permits ready distinction between content and skill areas in the general education curriculum. For example, to write well is a skill, though often taught most effectively through a content presentation. When we surveyed the institutions concerning the distribution of their courses relative to content or skill, we found a useful template by which to assess general goals.

Table 1:4: Requirements by Content Area

	Public 4-year (N = 15)	Public 2-year (N = 24)	Private not-for-profit (N = 18)	Private for-profit (N = 7)	All institutions (N = 64)
Social sciences	14	23	18	4	59
Natural sciences	14	21	18		53
Mathematics	12	19	14	3	48
Health/physical education	11	20	13		44
History	11	18	12		41
Humanities	9	18	11	4	42
Literature	11	12	15		38
Communications	9	15	5	4	33
Fine arts	12	6	14		32
Foreign Languages	9	5	8		22
Other	8	3	11		22
Technology	4	12	3		19
Ethics	8	1	9		18
International Studies	3	0	6		9

Table 1:5: Requirements by Skill Area

	Public 4-year (N = 15)	Public 2-year (N = 24)	Private not-for-profit (N = 18)	Private for-profit (N = 7)	All Institutions (N = 64)
Writing skills	15	22	18	6	61
Mathematical reasoning/ quantitative analysis	14	23	17	6	60
Oral communication skills	12	19	13	5	49
Computer/technology skills	12	23	10	1	46
Critical thinking skills	12	15	9	5	41
Ethical reasoning skills	8	9	9	1	27
Foreign-language skills	11	5	10	0	26
Library research skills	8	11	3	4	26
Other	7	13	4	1	25

By way of content we noted that Virginia Military Institute stood alone in not requiring a social sciences content, while the University of Virginia stands alone in not having a natural science requirement as a separate area (though it does require the combined area, mathematics/natural science). Four of the public institutions (Clinch Valley College, George Mason University, Mary Washington College, and Virginia Commonwealth University), six of the community colleges, and six of the private not-for-profit institutions do not specifically require history. By way of skills, nearly all require specific training or competence in writing, while a progressive decline characterizes the percentages of those who specifically require the remaining skills, with foreign language being required in only 26 of the 64 reporting institutions.

Respecting the attainment of announced goals or objectives a critical moment is the process for monitoring or approving course offerings. Of 64 reporting institutions, half have announced specific criteria (though many appear to be implicit rather than explicit) for course offerings to meet these objectives. Among the four-year public institutions only Virginia Military Institute did not have announced criteria. Among the specific criteria, those enunciated by Old Dominion University require course proposals that "(1) explain what methods will be used to meet each of four general learning goals; (2) explain what methods will be used to ensure that the course is an academically rigorous and substantive introduction to the discipline involved; and (3) explain what methods will be used to attain the special learning goals of that disciplinary area."

2) STRUCTURE OF GENERAL EDUCATION PROGRAMS

This summary only offers highlights of the structures of our general education programs. Certain questions do emerge as dominant, however, and we develop these briefly. In reviewing program structures, we were interested both in the number of credits actually required and in the course formats offered. We asked institutions to identify their programs in terms of six typical structures – namely:

- A common set of required courses that all students take;
- A set of content-oriented areas with course options in each area;
- A set of skills-oriented areas with course options in each area;
- A mixture of required courses and courses that are part of the major;
- No requirements are set; and
- Other.

Table 1:6: Characterization of Structure

	Public 4-year (N = 15)	Public 2-year (N = 24)	Private not-for-profit (N = 18)	Private for-profit (N = 7)	All institutions (N = 64)
A set of content-oriented areas with course options	10	10	15	0	35
A common set of required courses	2	3	1	7	13
A set of skills-oriented areas with course options	1	5	0	0	6
A mixture of required and major courses	0	5	0	0	5
Other	2	1	2	0	5
No requirements are set	0	0	0	0	0

Most institutions indicated a "set of content-oriented areas with course options," especially the four-year institutions, including 10 out of 15 public and 15

out of 18 private not-for-profit four-year institutions. At a distant second, institutions identified "a common set of required courses that all students take," with only Norfolk State University and Virginia Military Institute indicating this choice among public four-year institutions.

With regard to the number of credit hours required, our institutions are not less varied in their approaches. As part of their responses to the survey, the institutions reported the total number of credits required in general education. Eight of the 15 four-year public institutions reported a set number of credits in general education for all degrees. The average number of credits these eight required was 46.5. Six of them required between 48 and 52 credits. Longwood College required the fewest credits at 33, while Norfolk State University required 40, the next fewest.

The remaining seven of the public four-year institutions reported credit ranges, with the lower end of the range applicable to students who earn degrees outside of the arts and sciences (e.g., in engineering or health) or to students who come to the institution with a demonstrated proficiency. For example, at Virginia Commonwealth University, students in some professional schools (e.g., health and business) can earn as few as 31 credits to meet general education requirements, while students in the College of Humanities and Science must earn 63 credits.

Some institutions have a range even for students within the same unit, based upon a demonstrated proficiency. For example, the College of William and Mary provides for a range of 41 to 70 credits, the precise number depending upon such factors as what the student has had in terms of foreign languages and Advanced Placement credits, whether a course satisfies more than one requirement, and so forth. At the University of Virginia, we find 30 credits from the major included within the 74 to 80 general education credits, which means that its range is really 44 to 50.

Table 1:7: Total Number of Credits Required by Public Institutions

	Set number of credits required	Minimum in range of credits	Maximum in range of credits
PUBLIC 4-YEAR			
Christopher Newport University	51		
Clinch Valley College	52		
College of William and Mary		41	70
George Mason University		33	63
James Madison University		40	43
Longwood College	33		
Mary Washington College	49		
Norfolk State University	40		
Old Dominion University		42	54
Radford University	50		
University of Virginia		44	50
Virginia Commonwealth University		31	63
Virginia Military Institute	49		
Virginia Polytechnic Institute and State University		39	41
Virginia State University	48		
PUBLIC 2-YEAR			
Richard Bland College	48		
Virginia Community College System (transfer programs)		37	46
VCCS (non-transfer programs)	15		

Twelve of the 18 private not-for-profit institutions reported that they required for all degrees a determinate number of credits in general education. On average, they required 50 credits. Mary Baldwin College required the most at 68, while Hollins University required the least at 32. The remaining six private not-for-profit institutions reported credit ranges, with Bridgewater College (58 to 64) and Lynchburg College (58 to 63) at the high end, as shown in the following table.

ble 1:8: Total Number of Credits Required by Private Institutions

	Set number of credits required	Minimum in range of credits	Maximum in range of credits
PRIVATE NOT-FOR-PROFIT			
Averett College		39	58
Bridgewater College		58	64
College of Health Sciences		32	60
Eastern Mennonite University	49		
Emory and Henry College	39		
Hampden-Sydney College	52		
Hollins University	32		
Liberty University	55		
Lynchburg College		58	63
Mary Baldwin College	68		
Marymount University	54		
Randolph-Macon College	50		
Randolph-Macon Woman's College	42		
Saint Paul's College	57		
Sweet Briar College		43	45
University of Richmond	46		
Virginia Intermont College		48	49
Washington and Lee University	56		
PRIVATE FOR-PROFIT			
Bryant & Stratton College	32		
Dominion College	32		
ECPI - Richmond	15		
ECPI - Roanoke		15	17
ECPI - Virginia Beach/Hampton		15	17
National Business College	24		
World College	31		

The number of general education credits required often varies with the degrees offered. While 11 of the public four-year institutions report no such variations, George Mason University, Mary Washington College, the University of Virginia, and Virginia Commonwealth University apply higher credit standards to programs in the arts and sciences – requiring more credits than those in applied fields. It is appropriate to note, however, that credits required for graduation with applied degrees also vary across programs.

As a general rule, in our public four-year institutions (except for the two with substantial common requirements and excluding physical education), few courses other than writing are required of all students. In the private not-for-profit four-year institutions, slightly more courses in the arts and sciences are required of all students. Significantly, no institution, apart from the community colleges and the private for-profit institutions, lists any course in mathematics as a requirement for all students, and only Saint Paul's College lists courses in mathematics as required for all students in arts and sciences. Some explanation is in order.

It is a certainty that competence in mathematics is required for many programs in our colleges and universities. The means of attaining or demonstrating that competency, however, vary greatly and are sometimes specific to the particular program of study in which a student pursues a major. Thus, much instruction in mathematics takes place in relation to the respective disciplines.

At the same time, the absence of an identified general education component in mathematics does open the door to completion of baccalaureate degrees without instruction in mathematics. This will be true even at the University of Virginia, the only public four-year institution without a specific credit requirement in mathematics (mathematics falls in the combined category of mathematics/natural science). While many and perhaps most of the University's students will arrive with substantial ability in mathematics, and several will study mathematics at advanced levels, it will remain true that some will complete degree programs with neither college level study nor the requirement to demonstrate college level competence in mathematics.

In other subject areas, roughly half of the public four-year institutions require study in history, while 12 of the 18 private not-for-profit institutions and 17 of the 24 public two-year institutions do so. None of the institutions specified previously that this history must be satisfied with a course in American history, although James Madison University did initiate an American history requirement in 1998, to become effective in 1999, and Virginia Polytechnic Institute has just adopted a United States history competency requirement for future years. Half of the private not-for-profit institutions and two-thirds of the public four-year institutions required some credit in foreign language study, but all institutions allow for demonstration of proficiency to satisfy this requirement.

Table 1:9: Required Credits by Subject Area, Public 4-Year Institutions

	Computer literacy/ Technology	Critical Thinking	Ethical Reasoning	Fine Arts	Foreign Languages	Health/ P.E.	History	Humanities	
CNU	0	3	3	0	6-12	2	6	6	
CVC	0	0	0	3	6	1	0	3	
CWM	0	0	3-4	6	4-16	2	12	17-23	
GMU	0	0	0	3	12	0	0	0	
JMU	0	3	0	3	0	3	0	3	
LWC	0	0	1	4	3	3	3	0	
MWC	0	0	0	3	12	2	0	0	
NSU	0	0	0	3	0	3	3	6	
ODU	3-6	3	3	3	6	0	6	12	
RU	0	0	0	6	6	3	6	9	
UVA	0	0	0	0	14	0	3	0	
VCU	0-6	0-3	0-3	0	0-8	0	0	1.5-6	
VMI	0	0	0	0	0	4	6	0	
VPI	0	0	0-6	1-3	0	0	0-6	0-6	
VSU	3	0	0	0	0	4	0	12	
	International Studies	Library Research	Literature	Mathematics/ Quantitative analysis	Natural Science	Oral Communi-cations	Social Sciences	Writing	Total credits required
CNU	0	0	0	3	7	0	6	6	51
CVC	0	0	3	6	8	0	9	6	52
CWM	0	4	3	4	8	4	8	7-8	41-70
GMU	0	0	6	3-4	8	3	12	9	33-66
JMU	0	0	3	3-4	7	3	9	3-6	40-43
LWC	3	0	3	3	4	3	3	6	33
MWC	0	0	3	6	8	0	6	3	49
NSU	0	0	6	3	7	0	3	3	40
ODU	0	0	3	3	12	3	6	6	42-54
RU	0	0	3	6	8	0	18	6	50
UVA	0	0	0	0	0	0	6	6-7	44-50
VCU	0-3	0	0-3	0-11	0-23	0-3	0-18	6-12	31-63
VMI	0	0	0	6	8	1	0	12	49
VPI	3	0	0	6	8	6	0-6	9	39-41
VSU	0	0	0	6	8	0	12	6	48

Other requirements

CVC	6 credits in 'Western heritage'
CWM	4 credits in 'Study of non-Western culture; 2 hours in 'Artistic process.' All general education courses include critical thinking. The required 4-credit freshman seminar includes oral communication and library research.
GMU	0 to 6 credits in 'Non-Western Culture'; 0-6 credits in 'Philosophy/Religious Studies'; some categories overlap. Computer literacy/technology, critical thinking, and writing are taught across the curriculum
LWC	Parts of 33 required credits in 'Creative thinking', 'Understanding implications of knowledge', 'Understanding diverse perspectives', and 'Understanding inter-connections'
MWC	6 credits in "Western Civilization"
ODU	6 to 12 credits in upper-division requirements
UVA	3 credits in 'Non-Western perspectives'; 12 hours in 'Math-Natural Sciences'; 6 hours in the 'Humanities, Fine Arts, and Literature.' The university teaches some concepts across the curriculum.
VCU	The College of Humanities and Sciences requires 8 - 9 credits in Humanities and 3 credits in its Urban category
VPI	6 credits in 'Society and human behavior'

Table 1:10: Required Credits by Subject Area, Public 2-Year Institutions

	Computer literacy/ Technology	Critical Thinking	Ethical Reasoning	Fine Arts	Foreign Languages	Health/ P.E.	History	Humanities	
BRCC	0	0	0	0	0	2	6	0	
CVCC	3	0	0	0	0	2	6	6	
DSLCC	0	0	0	0	0	2	0	6	
DCC	3	0	0	0	0	2	3-6	6	
ESCC	3	0	0	0	0	2-3	6	6	
GCC	3	0	0	0	0	2	6	6	
JSRCC	2-3	0	0	0	3-14	2	6	6	
JTCC	3	0	0	0	0	2	3	6	
LFCC	3-4	0	0	0	0	2	0	6	
MECC	3	0	0	0	8	2	6	6	
NRCC	3	0	0	0	0	2	6	6	
NVCC	0	0	0	0	0-6	2	0-3	6	
PHCC	3	0	0	3	0	2	6	3	
PDCCC	3	0	0	0	0	2	6	6	
PVCC	3	0	0	0	0-6	2	0	6	
RCC	3	9	0	0	0	2	0	6	
SVCC	3	0	6	0	6-8	2	0	6	
SWVCC	0	0	0	0	0	2	0	6	
TCC	0	0	0	0	0-6	2	6	6	
TNCC	0	0	0	0	0-6	2	6	6	
VHCC	3	3	0	3	0-14	2-3	6	3	
VWCC	3	0	0	3	6	2	6	3	
WCC	0	0	0	6	0	2	6	6	
RBC	3	20	3	3	0	4	6	6	

	International Studies	Library Research	Literature	Mathematics/ Quantitative analysis	Natural science	Oral Communi-cations	Social Sciences	Writing	Total credits required
BRCC	0	0	6	6	8	3	6	6	37-46
CVCC	0	0	0	6	8	3	12	6	37-46
DSLCC	0	0	0	3	8	3	12	6	37-46
DCC	0	0	0	3-6	8	0	12	6	37-46
ESCC	0	0	6	3-14	8-16	3	12	6	37-46
GCC	0	0	0	6	8	0	12	6	37-46
JSRCC	0	0	0-6	3-14	8-24	3	6-12	6	37-46
JTCC	0	1	3	6	8	0	12	6	37-46
LFCC	0	1	0	3	8	3	12	6	37-46
MECC	0	0	6	6	8	3	12	6	37-46
NRCC	0	0	3	6	8	3	12	6	37-46
NVCC	0	0	0	6	8	3	9-12	6	37-46
PHCC	0	0	0	6	8	3	6	6	37-46
PDCCC	0	0	0	6	8	3	12	6	37-46
PVCC	0	0	0	3	8	0	12	6	37-46
RCC	0	4	0	3-6	8	3	12	6	37-46
SVCC	0	0	6	6	8	0	12	6	37-46
SWVCC	0	0	0	6	8	0	12	6	37-46
TCC	0	0	0	6	8	3	12	6	37-46
TNCC	0	0	0	6	8	0	12	6	37-46
VHCC	0	0	6	6	8	3	12	6	37-46
VWCC	0	0	6	3-9	8	3	6-12	6	37-46
WCC	0	0	6	6	8	3	12	6	37-46
RBC	0	0	3	6	8	3	6	6	48

Table 1:11: Required Credits by Subject Area, Private Not-for-Profit Institutions

	Computer literacy/ Technology	Critical Thinking	Ethical Reasoning	Fine Arts	Foreign Languages	Health/ P.E.	History	Humanities	
AC	0	0	0	6	4-14	0	6	0	
BWC	0	3	1-4	3	3-12	2	3	6	
CHS	1-4	0	3	0	0	3-6	0	6-9	
EMU	0	0	5	0	0	2	0	9	
E&H	1	0	3	0	0	0	0	3	
H-SC	0	0	0	3	6	0	3	21	
HU	4	0	0	8	0	0	0	8	
LU	0	0	2	3	0	0	3	0	
LYC	0	0	0	6	3-9	3	6	12-18	
MBC	3	0	0	9	0	2	0	9	
MU	0	0	3	0	0	2	3	9	
R-MC	3	0	6	3	3-12	2	6	0	
R-MWC	0	0	0	3	3-6	1	3	0	
SPC	3	3	6	3	0	3	6	6	
SBC	3	3	0	3	6-12	2	0	0	
UR	0	6	0	3	6-12	2	3	0	
VIC	3	0	3	3-6	0	2	6	0	
W&L	0	0	12	12	16	5	12	0	

	International Studies	Library Research	Literature	Mathematics/ Quantitative analysis	Natural science	Oral Communi-cations	Social Sciences	Writing	Total credits required
AC	0	0	6	3-6	4-8	0	9	3	39-58
BWC	0	1	3	3	8	3	9	3	58-64
CHS	0	0	3-6	3-9	8-40	0	3-18	6	32-60
EMU	9	0	0	3	4	2	3	3	49
E&H	3	0	4	3-4	4	1	3	3	39
H-SC	0	0	3	4	10	0	9	0	52
HU	0	0	0	4	4	0	8	4	32
LU	0	0	3	3	4	3	6	8	55
LYC	0	0	3-6	3-6	8-16	0	6	6	58-63
MBC	6	0	0	3	9	3	9	9	68
MU	0	0	3	6	4	0	9	9	54
R-MC	0	0	6	6	8	6	6	6	50
R-MWC	0	0	3	3	4	0	3	3	42
SPC	0	2	6	6	6	3	6	6	57
SBC	3	0	6	0	6	3	6	12	43-45
UR	0	0	3	3	8	3	3	3	46
VIC	0	0	6	3-6	4-8	3	6	6	48-49
W&L	0	0	6	4-8	4-8	0	9	3	56

Other requirements	
AC	6credits in 'Religion/Philosophy'
BWC	6 credits in 'World Cultures'; 2 hours in 'Wellness'
CHS	1 to 4 credits in 'Interdisciplinary Studies'
EMU	6 credits in 'Christian Faith'
E&H	3 credits in 'Religion, and 6 credits in Western Traditions
LU	14 credits in 'Religion'; 3 hours in 'Philosophy'; 2 hours in 'Apologetics'
LYC	2 credits in senior symposium
MBC	3 credits in 'Women's Studies'
R-MWC	3 credits in Philosophy or Religion
SBC	3 credits in Non-Western Studies

It would ordinarily be of interest to review course sequencing in a curriculum of general education. Our study, however, provides results that are less than clear with respect to this issue.

It appears that the reporting institutions responded in fairly idiosyncratic ways to the inquiry, rendering comparisons more tenuous. In general, it appears that general education courses serve as prerequisites for further study at a fairly minimal rate, on average only 27 percent of the courses at all the institutions serve this role.

On the other hand, a much higher percentage of the course offerings in general education seems to require prerequisites, 43 percent on average. This confusing finding will require further analysis. One might tentatively speculate, however, that the institutions have not so much mis-reported, as that we have isolated an effect of the attraction of general education courses into majors. This would imply, further, degrees of specialization in courses offered for general education beyond what would normally and reasonably be expected.

A final structural consideration is the provision for opting out that institutions provide. In the context in which the number of options for substituting or eluding the general education requirement is large, the published requirement will bear decreasing relationship to the actual experiences of students (whether positively or negatively).

In our study the great majority of institutions allow students to "place out" of general education courses, whether by examination or prior study. Only five of 61 institutions report no provision for "placing out." At most of the public four-year and private not-for-profit institutions, students may "place out" of at most one quarter of the general education courses. Of the balance of the public four-year institutions, three exceed that average by only one or two percentage points, and the last, Old Dominion University, allows a "placing-out" option for 100 percent of its general education curriculum. The number of students who avail themselves of this option appears to be reasonably small, although several institutions report wide ranges of frequency (from one to 70 percent). Naturally, the extent to which this option is exercised more frequently imposes an obligation of assessment that can demonstrate the attainment of the goals aimed at by general education through other means.

3) ACTUAL COURSE TAKING PATTERNS FOR 1993-97

The foregoing considerations should make clear why it is important to assess actual course taking patterns for undergraduate students. Not only do explicit requirements for general education curricula vary among institutions, but also within each institution there are complex interrelationships among explicit and tacit requirements, program structures, course designs, and criteria for fulfilling requirements.

For the purposes of this review, we identified a cohort of first-year students who entered in fall 1993, had completed at least 90 credits at the institution they entered, and who were enrolled through 1996-97. Thus, we eliminate students who had dropped out of school early, who had transferred to another institution, or who were taking so few courses each semester that they had not yet completed at least three-fourths of their program requirements.

The general education curriculum completed by this cohort of students may not be the curriculum the respective institution enforces today. This is particularly true for several institutions that have made major changes in their general education programs since fall, 1993. Among these are the College of William and Mary, James Madison University, Mary Washington College, Old Dominion University, and Virginia Commonwealth University. Moreover, the number of courses from which students may select to meet their general education requirements affects this analysis. At most institutions, students may select from a large number of courses, particularly in the humanities and social sciences. At the University of Virginia, students may select from more than 1,300 courses, but we have cited only the lesser number from which they commonly choose. Given this type of structure, one might expect students' choices to be widely distributed throughout the range of available courses. To the contrary, however, they choose rather narrowly, a small percentage of the available courses enrolling by far the larger number of students.

What are the courses most commonly taken, and the percentages of the cohort enrolled in each?

Although one might expect that all students would take a required course, very few courses are actually taken by a 100 percent of students, whether because the students are placed out or are exempt for other reasons. We find between 90 and 100% percent of the students enrolled in only 23 courses at the public institutions and 32 courses at the private not-for-profit institutions, as shown in the following two tables.

Table 1:12: Courses Taken by 90-100% of Cohort
Public Institutions

Public institutions	***Courses***
James Madison University	Freshman Seminar Reading and Composition II
Longwood College	Total Fitness Through Exercise Composition and Literary Analysis
Norfolk State University	Communications Skills I Communications Skills **II**
Radford University	Introductory Psychology Reading, Writing, and Research Skills
Virginia Commonwealth University	Communications Skills I Communications Skills II
Virginia Military Institute	Computing Speech Boxing Drug and Alcohol Abuse Awareness Principles of Physical Conditioning English Composition I English Composition II
Virginia State University	Reading and Writing About Literature I Personal Health Freshman Writing
Richard Bland College	Writing and Research Introduction to Literary Genres
Virginia Community College System	College Composition

Table 1:13: Courses Taken by 90-100% of Cohort
Private Not-for-Profit Institutions

Averett College	History of Western Civilization
Bridgewater College	Composition and Literary Forms
Hampden-Sydney College	Principles and Practice of Writing I Principles and Practice of Writing II
Hampton University	The Individual and Life Humanities I Humanities II World Civilization II English Health Education
Liberty University	Contemporary Issues I Contemporary Issues II Evangelism and Christian Life Theology Survey I Theology Survey II Philosophy and Contemporary Ideas Composition and Literature Old Testament Survey
Lynchburg College	History of Civilization I History of Civilization II Freshman English
Marymount University	General Psychology Composition I
Randolph-Macon College	Europe: Renaissance to 1815 Europe Since 1815
Randolph-Macon Woman's College	Colloquium
Roanoke College	Values and Responsible Life Writing Course II
Saint Paul's College	World History Since 1650 United States History to 1877 Introduction to Philosophy
Sweet Briar College	Strategies for Wellness

In order to identify a *de facto* general education program we have set a level of "high commonality" at seventy percent and report the results in the following table. Using this measure we identify a proxy for "common learning experience" in order to assess the performance of our institutions.

Table 1:14: Number of General Education Credits Taken in High-, Medium- and Low-Commonality Courses at Public and Private Not-for-Profit Institutions

	Number of credits taken in "high-commonality" courses (70-100% of cohort)	Number of credits taken in " medium-commonality" courses (50-69% of cohort)	Number of credits taken in "low-commonality" courses (30-49% of cohort)	Number of credits taken in courses with high, medium, and low commonality (30-100% of cohort)
PUBLIC 4-YEAR AND 2-YEAR				
Christopher Newport University	12	27	38	77
Clinch Valley College	21	19	27	67
College of William and Mary	0	9	20	29
George Mason University	9	13	13	35
James Madison University	6	12	33	51
Longwood College	8	16	30	54
Mary Washington College	6	10	39	55
Norfolk State University	18	24	12	54
Old Dominion University	6	15	12	33
Radford University	12	20	36	68
University of Virginia	0	6	7	13
Virginia Commonwealth University	6	6	15	27
Virginia Military Institute	11	16	30.5	57.5
Virginia Polytechnic Institute & S. U.	3	10	22	35
Virginia State University	15	18	25	58
Richard Bland College	23	11	8	42
Virginia Community College System	6	9	17	32
PRIVATE NOT-FOR-PROFIT				
Averett College	18	12	37	67
Bridgewater College	10	21	32	63
Eastern Mennonite University	0	9	25	34
Hampden-Sydney College	18	20	25	63
Hampton University	21	9	15	45
Hollins University	0	8	12	20
Liberty University	28	6	19	53
Lynchburg College	25	6	24	55
Marymount University	16	9	28	53
Randolph-Macon College	12	10	45	67
Roanoke College	28	12	36	76
Randolph-Macon Woman's College	3	6	24	33
Saint Paul's College	19	6	3	28
University of Richmond	2	3	22	27
Sweet Briar College	4	6	12	22

Only four institutions (the College of William and Mary, the University of Virginia, Eastern Mennonite University, and Hollins University) had no credit hours in courses taken by 70 percent or more of the cohort.

Further analyzed by subject matter, the "common learning experience" occurs almost entirely in writing or writing-related courses. At five of the institutions, students took some form of mathematics (including statistics) in high commonality courses (Christopher Newport University, Clinch Valley College, Norfolk State University, Richard Bland College, and Roanoke College). Social sciences provided high commonality enrollments at several institutions.

Natural sciences provided no high commonality enrollments (except for Christopher Newport University and Norfolk State University), and no science course attracted as much as 30 percent of the cohort at three of the public four-year, and three of the private not-for-profit institutions. Moreover, at two institutions (William and Mary and Averett College) Psychology as a Natural Science was the science course most commonly taken by the cohort.

Finally, there was broad enrollment in several foreign languages at many of the institutions.

The *de facto* general education curriculum, therefore, looks mainly like writing, social science, and, to a lesser extent, foreign languages at most our institutions. A wide variety of humanities courses are also included, but with no fundamental commonality.

4) ASSESSMENT IN GENERAL EDUCATION

Whatever the publicly stated goals or the actual practices of the general education programs in our institutions, assessment will be key to determining their adequacy ultimately. Unless expectations are made explicit, high standards set for performance, and systematic analysis and interpretation of evidence employed to determine the match between performance and expectations, not much can be concluded regarding the accomplishments even of attractive general education programs.

Fortunately, Virginia initiated its assessment program in 1987. The Council of Higher Education asked each public institution to define both what it wanted students to know as a result of its general education program, and also, how it expected to determine whether it had been successful. Many institutions struggled in their initial efforts to respond.

Virginia's institutions were not alone. Across the United States, institutions and agencies involved reported that assessment of general education was more difficult than was assessment of other academic programs, in part because institutions had difficulty making explicit what they expected from general education curricula. This problem was only compounded by the reality of contested interpretations. For example, a goal that states, "upon completion of the general education program, students should be able to think clearly and

creatively about ideas, issues, and texts both within and across academic disciplines," may have vastly different applications depending on the interpretations that spawn it.

Through early assessment practices and findings, several Virginia institutions found that their general education programs were ill defined and lacking in focus. Sometimes such findings stimulated changes in general education programs. For example, James Madison University's early efforts led to a "total redesign" of the core liberal arts curriculum, which is now called the General Education Program. Moreover, James Madison has embedded assessment into its cross-disciplinary structure.

Virginia institutions have frequently been recognized for unusual strength in this regard during the reaccreditation visits from the Southern Association of Schools and Colleges. Their struggles with the assessment initiatives have provided nearly a decade-long experience in meeting the accreditation criterion of "institutional effectiveness." More importantly still, this experience leaves most Virginia colleges or universities better prepared today to respond to incentives and encouragements to fashion general education programs that truly fulfill the goals envisioned.

Our institutions employ diverse assessment strategies, ranging from standardized examinations to class grades to systematic review of student learning outcomes and alumni surveys. Bridgewater College employs a particularly notable example of portfolio assessment in its processes. Though somewhat less ambitiously, Virginia State University and the College of William and Mary also employ student portfolios.

Whatever the array of assessment tools, we may say, in general, that the institutions that have implemented assessment most systematically have also been those that have advanced farthest in refining general education programs. The principal advantage of assessment is that it can drive curriculum improvements.

Our review of general education not only points to existing practices but, to the same extent, participates in the general embrace of continuous quality assessment spawned by the "Principles of Good Practice for Assessing Student Learning," which the American Association for Higher Education developed with Council of Higher Education participation and which the Council later adopted.

In recent years, Christopher Newport University reviewed writing samples of a random group of graduating seniors and found too many of them lacking still the proficiency levels expected. The University increased its writing requirements as a result (as the foregoing analysis illustrates), and after three years it noted improved abilities to compose and summarize texts, use correct sentence structure, and make critical responses to ideas.

Other institutions also made a number of changes. Virginia State University assigned first-year writing courses to senior faculty members and reallocated three new positions to mathematics. Radford University reported that assessment had led to curricular changes, changes in course sequencing and pre-requisites, and the development of internships.

In general, the public institutions have integrated assessment into their planning and evaluation loops, benefiting from earlier Council policy guidance. This enables them, even beyond the levels of their private counterparts, to respond to renewed calls for curriculum improvement.

5) PROCESS OF CHANGE IN GENERAL EDUCATION PROGRAMS

Without exploring the details of provisions for change, we may say that it is by now a built-in expectation in Virginia's public institutions that systems and processes to sponsor change are integral to the operation of dynamic institutions.

General education programs participate fully in that dynamism. For this reason, the sometime criticisms of general education programs occur not within a vacuum but within a system of higher education that is now predisposed to criticize itself. Profiting from the momentum for change wherever it arises, they responded to our survey with a high degree of consciousness of the need to change. We asked them what motivates the reviews of general education that they are undertaking or plan soon to undertake, and all but two of the four-year institutions pinpointed "broad concerns about general education."

The direction of recent changes has been to introduce broad coverage across basic disciplines, greater rigor in foundation classes, narrowing the range of student choices, and presenting a more coherent, structured, and skill-oriented curriculum. We find different emphases and even directions in different institutions, and there remain some yet to begin meaningful reform of their general education programs. The Council's study results detail these across all of the reporting institutions in all of the categories of higher education in Virginia.

The next stage of analysis for the institutions, in light of our analysis of the patterns of actual enrollments, will be to weigh program accomplishments in the light of program professions. If prior assessment efforts may serve as a guide, we can reliably expect that the next decade will be no less distinguished by significant reforms in general education than was the past decade. What will be of greatest value in the next era of reform, however, will be the fact that the next wave of change will represent a continuing momentum, and not merely an awakening from slumbering neglect.

Essentially all institutions, public and private, report that comprehensive reviews of their general education programs were either underway currently or

about to begin. In the prior era of reform, institutions were most moved by perceived incoherence in the former general education program, a need to improve basic skills in students, changes in pedagogy, and an urge to meet imminent workforce demands. Many of those concerns will persist into the next era of reform, but it may be fairly foreseen at this stage that institutions will be no less moved by the desire to attain some of the nobler goals cited at the opening of this discussion.

While the fundamentally individual skills of writing, calculating, and navigating changing career terrains will always remain of prime importance, there will be a qualitative advance in general education programs when they can aim with equal certainty to advance "power, morals, order, and happiness" in the society.

To these ends we require to amplify individual skills with informed social skills. General education also seeks a public good.

RECOMMENDATIONS

TO VIRGINIA COLLEGES AND UNIVERSITIES

The Council of Higher Education makes the following specific recommendations concerning general education programs.

Institutions and their Boards of Visitors, if they haven't already done so, should:

- state and make widely known across campus the rationale and student learning goals for their general education programs; only two institutions lack such a rationale and seven lacked such goals, but many need revisiting;
- define what they mean by an educated person; forty-two institutions have omitted this requirement;
- define strategies to meet their student learning goals;
- require their students to complete at least 40 credits in general education;
- set criteria that determine which courses are appropriate for general education, and periodically review those courses to determine if they continue to meet the goals of the general education program;
- require that all students gain competency in writing, oral communication, mathematics, natural or physical sciences, social sciences, foreign languages (through the intermediate level), humanities, and history (including US history), in ways that best meet institutional curricular rationales and designs;
- provide funds for faculty development related to general education programs;
- develop mechanisms for faculty oversight, periodic review, and revision;
- develop ways to strengthen faculty ownership of the general education program or courses within it;
- use multiple methods to assess their programs and use data gathered to improve them;
- insure that class size is appropriate to subject mater, level of instruction, and the need for class discussion; and
- request periodic reports on how well students meet the general education goal set by the institution.

Moreover, the Council of Higher Education makes the following general recommendations concerning areas in which institutions might focus attention in improving their general education programs:

(1) Each institution should emphasize acquiring intellectual skills as an important rationale for a general education program.

(2) Each institution should include in a rationale for general education discussion of its general education program's importance to our polity, our economy, and our cultural heritage.

(3) Each institution should ensure that students gain breadth of knowledge through the general education experience, as a complement to the depth of knowledge gained through the major.

(4) Each institution should develop its own appropriate balance of emphasis on skill development and emphasis on content knowledge in its general education program.

(5) Each institution should judge deliberately when such special features as honors courses, freshman seminars, and service learning are appropriate for a general education program and include review of those special features in assessments of the general education program.

(6) Each institution should examine the number of course titles that may satisfy each general education requirement and seek to limit the range of such choices.

(7) Institutions with general education requirements that vary among multiple units or by degree type should seek to minimize those differences in general education requirements.

(8) Each institution should review its practices with respect to placing out of general education requirements and limit the percentage of requirements that may be satisfied in this way.

(9) Each institution should establish clear oversight responsibility for its general education program.

(10) Each institution should formally review its general education program as part of the institution's regular cycle of academic program reviews and conduct a comprehensive review not less than once each decade.

(11) SCHEV staff will alter its data collection from the institutions so that its inventory will reflect the courses meeting general education requirements.

VOLUME TWO – FULL REPORT

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Introduction

Any major study must commence with an agreed-upon definition of the subject to be examined. The meaning of the phrase "general education" is neither self-evident nor as obvious as some might think. It is sometimes used as a synonym for the phrase "liberal education," a concept whose meaning has prompted its own plethora of controversies. For the purposes of this study, "general education" refers to that part of the undergraduate curriculum which undertakes to introduce students to the common fund of knowledge with which college-educated persons should be familiar and/or to equip them with skills to fill the various roles that contemporary society expects of college-educated persons. Its signal attribute is that it represents the principal - and often the only - common intellectual experience shared by graduates of a given college or university.

The importance of general education to the undergraduate curriculum is underscored by the fact that the Commission on Colleges of the Southern Association of Colleges and Schools (SACS), the regional accrediting agency responsible for accrediting public and private institutions of higher education in Virginia, makes it a condition of eligibility for accreditation that an institution have an acceptable general education component of its undergraduate curriculum. In addition to constituting a specified minimum number of credit hours, courses must be drawn from three broad areas (humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics) and "must be designed to ensure breadth of knowledge and must not be narrowly focused on those skills, techniques, and procedures peculiar to a particular occupation or profession." [i] All of the public and private not-for-profit institutions participating in this study are accredited by SACS and thus are required to meet this requirement. Accrediting associations with responsibility for the private for-profit institutions have comparable requirements.

In spite of these accreditation requirements and the near-universality of general education programs as a component of undergraduate education, some people perceive that today's college graduates are less well-prepared in basic knowledge than college graduates of previous generations and in some cases lack the basic skills necessary to become contributing members of society. Several high-profile national studies have raised questions in this regard,[ii] and the media have fueled concerns about student achievement levels in content areas traditionally covered as part of general education. So pronounced have these concerns been that the phrase "dumbing-down" as applied to the curriculum of both public schools and institutions of higher education has become embedded in the national vocabulary.

The impetus for the current study may be found in two concurrent developments within the Commonwealth in the early months of 1998 relating to general education. First, in February, the Virginia Association of Scholars (VAS)

released a report entitled *The Troubling State of General Education: A Study of Six Virginia Public Colleges and Universities*, in which it reviewed the general education curricula of six of the 15 public four-year institutions of higher education in Virginia. (The institutions reviewed were the College of William and Mary, George Mason University, the University of Virginia, Virginia Commonwealth University, Virginia State University, and Virginia Polytechnic Institute and State University.) This study alleged that Virginia's leading public colleges and universities are failing their students. [iii]

The VAS alleged that there are too few requirements and too much unguided student choice. VAS reported that courses that do fulfill requirements are often narrow in scope and not related coherently to the courses that will be chosen before or after. Too frequently, VAS reported, students leave college with only a random collection of unrelated courses on recondite or even trivial subjects.

The VAS study proved highly controversial. Many representatives of the higher-education community in Virginia criticized it, alleging that its methodology was flawed and its findings ideologically motivated. The Council of Higher Education heard a presentation by the study's authors at its February 1998 meeting and expressed a desire for a more comprehensive appraisal of the state of general education at all 39 of the Commonwealth's public institutions of higher education, as well as at the private colleges.

The second major development relating to general education occurred with the opening of the General Assembly's 1998 session. Two bills introduced in the House of Delegates within a week of each other related to the subjects college students should be required to take in order to graduate from a Virginia public institution of higher education. Both bills sought to amend the provisions of the *Code of Virginia* establishing the powers of the governing bodies of educational institutions, one of which is "To confer degrees and establish graduation requirements." House Bill No. 1006, introduced by Delegate David B. Albo, would have added "...which shall include for a bachelor's degree the satisfactory completion of a minimum of three credit hours of study in computer science or proficiency." House Bill No. 492, introduced by Delegate Glenn M. Weatherholtz, was identical except that it substituted "United States history" for "computer science or proficiency."

The setting of the curriculum of collegiate programs has traditionally been a jealously guarded prerogative of the individual campuses and especially of the faculty at each institution, and such legislative prescription of curricular content was unprecedented in Virginia. Following intense protests from the institutions, neither bill survived. House Bill 1006, relating to computer science, was defeated in committee by a vote of 3-20. House Bill 492, relating to United States history, was continued to 1999, following introduction of a compromise solution. House Joint Resolution No. 346, introduced by five patrons in the House (including

Delegate Weatherholtz) and one in the Senate, resolved "that the boards of visitors of the public institutions of higher education be requested to review their curriculum to incorporate American history as a requirement for a bachelor's degree." This resolution easily passed both houses. . In addition, legislators were made aware of the Council of Higher Education's intent to conduct a comprehensive study of general education requirements at Virginia's colleges and universities. (In November of 1998, the House Education Committee dealing with carry-over legislation voted to leave HB 492 on the table.)

During the summer of 1998, SCHEV staff with the advice of a broad-based study committee (membership of the group is in Appendix I), including representatives from the public and private institutions and several other knowledgeable constituents, developed a detailed survey of general education programs. The chief academic officer, who usually holds the title of provost, vice president for academic affairs, or dean of instruction, represented most institutions in this endeavor. In addition to the survey form, a questionnaire with 35 questions seeking both objective and narrative responses, each institution provided detailed information concerning the structure of its current (1997-98) general education program, its past (1993-97) programs through which a cohort of students would have passed, and its ways of assessing educational outcomes. The purpose collecting these data was to provide the basis for an accurate, factual description of the current state of general education at Virginia's colleges and universities. A copy of the survey is in Appendix II.

All 39 public institutions of higher education were expected to participate in the study and all did, although two did not submit assessment matrices. The private institutions -- both not-for-profit and for-profit -- were invited to participate on a voluntary basis, and most (25 of 47 institutions) did. These numbers include 18 of the 36 private not-for-profit undergraduate institutions in the Commonwealth and seven of the 11 private for-profit institutions. Two additional private not-for-profit institutions supplied data on which courses met general education requirements, but did not complete the survey questions, and one of the private for-profit institutions submitted separate data for each of its three campuses. With these additions, 66 institutions (68 campuses) participated in at least one part of the study. Table 1 provides an overview of the number of institutions that responded to each of the four sections of the survey. (N.B. All percentages given in the study were based on the universe of institutions that elected to participate in that particular part of the study.)

	Survey questionnaire	1993-1997 General education requirements	1997-1998 General education requirements	Assessment matrix
Public 4-year	15	15	15	13
Public 2-year	24	1	24	22
Private not-for-profit	18	16	16	12
Private for profit	7	8	8	8
All institutions	64	40	63	42

TABLE 1
Number of institutions completing each part of the survey

As SCHEV staff embarked upon tabulating and analyzing the voluminous responses from the participating institutions, it became abundantly apparent that the institutions care deeply about the nature and quality of their general education programs and are eager for constituencies outside the institution to become more knowledgeable about what each is doing. Staff regrets that limits of time and space prohibit a full explication of the rich offerings of each institution that participated in this study.

Part One: The rationale for general education programs

1.0 Official statements

Both the State Council of Higher Education for Virginia and accrediting associations require institutions of higher education to have official statements of their mission or purpose. These statements articulate why the institution exists and what it attempts to accomplish. Formulating a mission statement is an invaluable component of strategic planning, because goals and objectives in all academic and administrative areas must flow from an institution's overall mission and purpose.

Similarly, specific academic units and programs often have an official statement of their philosophy or rationale. Because of the prominent role in undergraduate education of general education programs, in which all students at an institution participate, these programs usually have formal statements of their philosophy or rationale. All of the public institutions, both four-year and two-year, and the 18 private not-for-profit institutions that participated in this portion of the study reported having an official statement of the philosophy or rationale for their general education programs. (In the case of the 23 community colleges, reference was made to the relevant policy of the Virginia Community College System.) Among the private for-profit institutions, Dominion College and National Business College reported that they lacked such a statement.

Statements of philosophy or rationale often were drawn from the institution's overall mission statement. They were usually printed in the institution's undergraduate catalog, either as part of the institution's mission statement at the beginning of the catalog or as introduction to the catalog's section on general education. Another source of material describing the philosophy or rationale for some institutions' general education programs was the report of internal committees, usually composed primarily of faculty members, which have studied the subject at episodic intervals and recommended significant changes (often called an "overhaul" of the program). A final source of this type of material is from an institution's self-study conducted at ten-year intervals for reaccreditation purposes.

Four overarching themes emerge from the general education rationale statements submitted by the institutions as part of this study. Institutions want their general education programs to:

- provide foundational knowledge and basic skills to prepare the student to pursue a major and professional programs;
- enable the student to synthesize information and to make connections across disparate fields of study;

- form a basis for the student to become an informed and productive member of society; and
- inculcate in the student a desire to become an active, lifelong learner.

No major differences were apparent between the responses of the public and private institutions or between the four-year and the two-year institutions. The for-profit institutions tend to emphasize career preparation and professional success more than do the other institutions.

Typical of the rationale statements is that of Radford University: "The primary mission of Radford University's General Education Program is to provide undergraduates with a solid foundation for lifelong learning. This foundation includes knowledge, skills, and experiences necessary for advanced study in academic disciplines and for personal growth as responsible, productive members of society." Similarly, Sweet Briar College states that its curriculum is organized "on the premise that a foundation in the liberal arts and sciences enhances the development of critical and creative abilities, develops the ability to synthesize disparate information, equips the student for graduate and professional education, and encourages the individual to learn long after leaving Sweet Briar College."

World College undertakes to provide an education "which enables the individual to meet today's requirement for professional and personal leadership and to give a life-long sense of self-achievement, self-reliance, and success." George Mason University's statement elaborated on these themes: "Through general education, students gain knowledge of the basic disciplines, skill in relating materials within the disciplines, and some understanding of human civilization as a whole. All courses fulfilling general education requirements are intended to combine these elements. Thus, in a single course, students should gain basic knowledge of a particular discipline, skill in the methods that produced that knowledge, and an understanding of the discipline's common attitudes and its place within human thought and activity." Longwood College's statement sums up its philosophy more succinctly: "The purpose of the General Education Program of Longwood College is the development of disciplined, informed, and creative minds."

While most of the statements submitted tended to be rather generic, one statement stood out as especially tailored to the mission of the institution. The statement of Eastern Mennonite University, as an institution with a strong religious tradition that emphasizes intercultural understanding, emphasizes that aspect of its heritage. "Preparing students for an interdependent world requires an understanding of our cultural and religious heritage, the development of a personal faith, and the achievement of cross-cultural understandings which enable a responsible contribution in the global village. Along with solid career preparation, students develop life-long learning skills in communication, critical thinking and analysis, and in social and personal relations.

Often the statements refer in very general terms to the fundamental areas of human knowledge that are the basis of the curricular structure. According to Lynchburg College's statement, "Students who graduate from Lynchburg College will have developed the ability to locate themselves in various cultural and intellectual contexts, make sense of achievements of imagination and creativity, understand how scientific methods and knowledge can inform choices and action, and integrate ideas from a wide range of sources and disciplines into coherent responses to life's challenges."

Several institutions sought to convey the rationale for their general education program by reference to the characteristics of an educated person. For example, the Virginia Community College System defines its General Education program as "... that portion of the collegiate experience that addresses the knowledge, skills, attitudes, and values characteristic of educated persons. It is unbounded by disciplines and honors the connections among bodies of knowledge." The College of William and Mary states that its curriculum "seeks to develop those abilities that characterize a liberally educated mind: literacy, a command of language and sound argumentation in speech and writing; mathematical and scientific methodology; understanding of foreign languages and cultures; knowledge of the historical roots of our contemporary world; appreciation of the creative arts as an ordering and expression of human perceptions; and the ability to recognize and examine the values which infuse thought and action.

As part of the survey for this study, institutions reported on whether they had adopted a definition of an educated person. Answers to this question proved to be substantially different according to institutional type. Twenty-two of the twenty-four two-year institutions responded negatively; the definitions proffered by the remaining two were implicit, derived from explanations of curricular goals and values. The pattern was similar among the private for-profit institutions, with five of seven responding negatively. Among the four-year institutions, responses were divided among those who responded negatively, those who responded positively but proffered only implicit definitions, and those who supplied explicit definitions of an educated person. The public four-year institutions were twice as likely (33%) as the private not-for-profit institutions (17%) to have explicit definitions.

	Yes (Explicit)	Yes (Implicit)	No	In process	Definition missing
Public 4- year (N =15)	5	6	4		
Public 2-year (N = 24)	0	2	22		
Private not-for-profit (N = 18)	3	4	9	1	1
Private for-profit (N = 7)	0	2	5		
All institutions (N = 64)	8	14	40	1	1

TABLE 2
Institutions with a definition of an educated person

The eight four-year institutions with explicit definitions of an educated person span the various types of senior institutions: five are public, and three are private; one is a large state university (Virginia Tech), one is a medium-sized liberal arts institution (the College of William and Mary), one is a small military institute (Virginia Military Institute), two are historically black institutions (Norfolk State University and Saint Paul's College), and two are women's colleges (Mary Baldwin College and Randolph-Macon Woman's College). A typical definition is provided by the response of Saint Paul's College, which states

> An educated person is capable of inquiry, abstract and logical thought, and critical analysis. Further, an educated person is endowed with the capacity to appreciate the arts, clarify values, develop historical consciousness, and an awareness of international and multicultural issues. Finally, an educated person appreciates science and technology.

Mary Baldwin College's catalog has a twelve-item entry entitled "Characteristics of the Well-Educated Person of the Third Millenium," which includes the following excerpts:

- She has a firm foundation in the arts, humanities, and sciences.
- She understands and appreciates the major elements of her culture, yet she is not culture-bound. She recognizes and values the integrity of cultures not her own.
- She is aware of and engaged with the world beyond herself and her immediate personal and professional concerns. She is socially committed.
- She is comfortable with technology and uses it to enhance her personal life and extend her professional abilities.

- She is skilled at group processes and uses them to cope with specialization and environmental complexity.

Virginia Tech's Statement of Purpose for its University Core Curriculum is similarly foresighted concerning the abilities that educated persons of the future must have:

> As we move into the 21st century, both continuity and change are required in higher education. On the one hand, we must continue to foster vital links with our common cultural heritage and to inculcate crucial intellectual skills. On the other hand, the contemporary world presents a number of critical issues with which every society must grapple. Educated citizens in the years ahead must be able to react creatively to cultural, racial, and gender-based diversity, and to cope effectively with problems and potentialities stemming from such developments as technological advances and environmental crises.

One may conclude from these examples that the commonly accepted definition of a college-educated person is undergoing profound changes similar to changes affecting institutional mission statements, changes in statements of the philosophy or rationale for general education programs, and changes in the structure of general education curricula. No aspect of the higher education enterprise has remained untouched by the social, economic, and political forces redefining the academic landscape as we approach the twenty-first century.

1.1 Underlying rationale

So far, we have concentrated on examining officially adopted and published statements of how the institutions view their general education programs and what those programs attempt to achieve. Another survey question sought to capture the interpretation of the institutions' academic officers concerning which of the commonly articulated rationales for general education characterize the general education program at their particular institutions. The survey instrument offered respondents a list of thirteen possible rationales, which were listed in alphabetical order. Respondents were instructed to check all that apply. There was no limit on the number of choices that could be checked, nor was their any attempt to rank order choices according to priority. A fourteenth choice of "other" was available for any additional rationales distinct from those listed. The choices that were offered were:

- Acquiring intellectual skills
- Creating a learning community
- Cultivating personal fulfillment (to live "the life more abundant")
- Developing habits of mind of a liberally educated person
- Developing social and civic competencies and values

- Integrating learning
- Learning more about oneself
- Producing an educated citizenry
- Producing a versatile workforce (prepared for future career changes)
- Providing a foundation of learning experiences to enable advanced studies
- Sampling a variety of fields to enable choice of a major or future profession
- Supplementing concentration in a specialized field
- Transmitting cultural heritage/s and values

The table on the following page summarizes the number of respondents who checked each item by category of institution.

	Public 4-year (N = 15)	Public 2-year (N = 24)	Private not-for-profit (N = 18)	Private for-profit (N = 7)	All institutions (N = 64)
Acquiring intellectual skills	15	23	18	6	62
Developing social and civic competencies and values	15	22	13	6	56
Producing an educated citizenry	15	21	13	6	55
Providing a foundation of learning	13	21	15	6	55
Developing habits of mind of a liberally educated person	14	17	17	4	52
Producing a versatile workforce	14	20	8	7	49
Integrating learning	11	18	14	6	49
Learning more about oneself	13	18	9	6	46
Transmitting cultural heritage/values	12	19	14	0	45
Cultivating personal fulfillment	13	18	11	2	44
Sampling a variety of fields	12	14	12	1	39
Creating a learning community	11	14	9	4	38
Supplementing concentration	9	11	9	2	31
Other	7	3	2	0	12

TABLE 3
Rationales for general education programs

Table 3 demonstrates that there is substantial similarity across categories of institution in the relative importance attached to these various rationales for general education. "Acquiring intellectual skills" was most frequently checked, with 62 of the 64 institutions responding to this part of the study indicating that this rationale characterizes their program. (Dominion College did not check this choice, and Dabney S. Lancaster Community College did not check any choices, deferring to the policies of the Virginia Community College System for this

question.) Two very similar choices, "Developing social and civic competencies and values" and "Producing an educated citizenry," were close behind, with 56 and 55 responses respectively. Only one public institution (Richard Bland College) did not check the former, and two public institutions (Richard Bland College and Lord Fairfax Community College) did not check the latter. Among the private not-for-profit institutions, three checked neither of these choices (Marymount University, the University of Richmond, and Virginia Intermont College), while Randolph-Macon Woman's college did not check the former, and Mary Baldwin College did not check the latter. One private for-profit institution (Dominion College) checked neither of these two choices.

In spite of the overall similarities, some differences by institutional type did emerge. Among the private not-for-profit institutions, most of which are small liberal arts colleges, only one institution (Liberty University) did not check "Developing the habits of mind of a liberally educated person." Also, these institutions put substantially less emphasis on "Producing a versatile workforce," with less than half of the institutions checking this choice. Conversely, the public two-year institutions and the private for-profit institutions placed greater emphasis on workforce preparation, with all but three of the former group and every member of the latter group checking this choice. None of the private for-profit institutions indicated that they sought to transmit cultural heritage/s and values.

1.2 Breadth and depth

In response to the survey for this study, institutions explained whether and how they have sought to ensure that students gain a breadth of knowledge through their general education experience. In a separate question, they were asked for the same information concerning depth of knowledge. All participating institutions responded to the first question affirmatively concerning their efforts to ensure that students gain a breadth of knowledge. Almost all of the responses referred to the structure of the general education curriculum as the principal means of ensuring breadth. Because students usually are required to select courses from each of the major areas into which the curriculum is structured, they are exposed to the content and methodology of a broad range of disciplines.

The words "broad" and "breadth" appear repeatedly in the institutions' publications concerning the general education programs. For example, the catalog of Virginia Commonwealth University states,

> The goal of the program is to ensure that students acquire the intellectual skills and breadth of knowledge that will not only contribute to the success of their undergraduate studies but will prepare them for the challenges and opportunities of the twenty-first century. The university has identified a series of broad educational

commitments as well as seven curricular elements that constitute the Undergraduate General Education Program.

The undergraduate catalog at the University of Virginia states, "The first two years are intended to be spent in developing the knowledge and skills associated with a broad range of basic academic disciplines."

Providing breadth is usually seen as a particular responsibility of the general education curriculum. The catalog of Virginia Highlands Community College declares, "The programs in general education at VHCC emphasize broad learning that goes beyond job training and skill development. These courses are aimed at helping students develop a perspective of the broad aspects of human knowledge." The College of Health Sciences, although devoted to professional preparation of students in a specific field of endeavor, likewise emphasizes the importance of breadth in the general education curriculum. "The general education components of the curriculum open doors to a broader understanding of society and self, intellectually and emotionally, as students develop into responsible citizens as well as professionals in the health sciences."

Among the strategies that institutions have used to ensure that students' general education experience has sufficient breadth are (1) development of learning goals that emphasize this aspect and (2) use of breadth as a criterion for inclusion of a course in the general education curriculum. As an example of the former, Longwood College includes the following in the Intellectual Goals section of its College Student Development Goals: "Mastery of a broad body of knowledge in the liberal arts and sciences, so you can see things in perspective, appreciate and enjoy artistic expression, and critically, creatively, and logically respond to the complex world around you."

Mary Washington College and James Madison University are examples of institutions that have pursued the latter strategy. Mary Washington College specifies that general education courses must meet certain expectations with respect to breadth: "The content of the course is broad enough so that it moves beyond a focused examination of one particular sub-area and instead includes a range of the topics investigated by the discipline of study the course represents." James Madison University requires that "each package and cluster must introduce students to a broad area of human knowledge, with specific attention paid to interrelationships, not just to individual disciplines or bodies of knowledge."

Several institutions addressed the need for breadth in the general education curriculum in contradistinction to the need for depth of study in the major. For example, Lynchburg College maps out its curriculum's design as follows:

> The academic program of study at Lynchburg College consists of three elements: general education, designed to give students breadth of knowledge in the liberal arts, consisting of 58-63 semester hours; a major field of study, designed to provide in-depth knowledge in a single academic area, comprising one-third to one-half of the program; and electives which complete the remainder of the course of study.

The same distinction is drawn by several other institutions. The University of Richmond, for example, includes the following in its catalog: "A liberal arts education is typically characterized by the development of broad intellectual and cultural interests and by the achievement of a significant body of skills and knowledge. It is the particular responsibility of a general education curriculum to address the first of these goals - the broadening of students' interests - while also laying the foundation for the acquisition of advanced skills and deeper knowledge within optional areas of concentration, normally defined as the major." Virginia Tech, in the Statement of Purpose for its University Core Curriculum, declared, "While the major may be expected to provide in-depth study in one discipline, the core curriculum is designed to introduce the student to a range of traditions, modes of thinking and inquiry, and issues of central human importance now and for the future."

Given this pervasive dichotomy between general education as the provider of breadth and the major as the provider of depth, it is not surprising that some institutions responded in the negative to the survey question that asked whether and how they have sought to ensure that students gain a depth of knowledge through their general education experience. Nine institutions responded that they seek to ensure depth through the major rather than through general education; of these, four are public (the College of William and Mary, Longwood College, Virginia Commonwealth University, and Blue Ridge Community College) and five are private (Hollins University, Liberty University, Lynchburg College, Randolph-Macon Woman's College, and Virginia Intermont College). These institutions generally pointed out that the general education program has been designed to promote breadth of learning, while depth is intended to be accomplished through the major.

Typical of these institutions is Randolph Macon Woman's College, whose catalog states:

> The organization of the curriculum is intended to meet [two] complementary objectives. The first is *breadth*, to secure for each student a comprehensive background of knowledge, the common possession of persons educated in the liberal arts. The second is *depth*, to provide the opportunity for each student to focus on a field holding special interest for her, and thereby to attain a greater mastery over the subject matter and a more expert familiarity with the methods of scholarship within her chosen field. These two objectives are met through a General Education Program and a Major Program."

Randolph-Macon College responded to this question by referencing the ten learning goals of its curriculum. Goal Nine relates to depth of knowledge:

> Students should gain a *deep understanding in a major field.* This depth is required to enable graduates to function in a world driven by information. Majors should be of sufficient strength for bright students to gain graduate school admissions in the field of their choice. Depth of instruction should also enable those qualified and seeking professional careers in medicine or law to gain admission to these post-graduate opportunities. One aspect of depth of study within a major is an experience that culminates the study. Each student should participate in some activity that draws together principles from various courses of study, examines a topic of special interest using skills and abilities drawn from several courses, or invites comparisons and contrasts about components of the major courses of instruction.

Among institutions that stated or implied that they do seek to ensure depth of learning through general education, the major was still often cited as the primary source of depth. For example, James Madison University, having cited the structure of its general education curriculum as fostering conceptual or thematic connections through which students gain depth of knowledge, goes on to add, "However, JMU believes that the major locus of depth in the curriculum ought to be in the major and professional programs." Washington and Lee University, having pointed out that some of its requirements (*e.g.*, writing and foreign languages) are based on competency and therefore implicitly require students to attain some degree of depth of knowledge, goes on to say, "Our major programs ensure depth in at least one area." And Northern Virginia Community College, which cited electives and honors courses as promoting depth, observed an inherent limitation for two-year institutions: "Two-year associate degrees do not have room for much depth."

In spite of the primary importance of majors in providing depth, institutions cited numerous aspects of their general education programs that contribute to depth of knowledge. For example, Old Dominion University noted that three of the six areas of their general education curriculum require two courses, and Virginia Military Institute stated that a full year is required in four areas. Mary Baldwin College alluded to its requirement of six hours in a single discipline in each content area. Virginia Tech cited the use of prerequisites and sequencing of courses and cited "depth studies," combinations of courses required in some areas. Three community colleges (Danville, Eastern Shore, and Germanna) mentioned sequencing of courses as promoting depth. Some institutions cited research opportunities, independent study, and small-group learning experiences as promoting depth of learning. Clinch Valley College stated that it is developing a general education seminar that will ensure that students recall, integrate, analyze, and evaluate critical knowledge from their general education sequence of courses.

1.3 Learning goals and objectives

Over the past decade, Virginia has been a pioneer in the national movement towards formal assessment of the educational outcomes of academic programs offered by its colleges and universities. Section 23-9.6:1 of the *Code of Virginia* directs the Council of Higher Education "to develop in cooperation with

institutions of higher education guidelines for the assessment of student achievement," and those guidelines have required the public institutions to report to SCHEV regularly concerning their progress in assessing student achievement.

In order to develop a systematic assessment program, one of the necessary elements is a set of learning goals for each academic program, usually derived from a rationale statement for that program or from the institution's overall mission statement. Such goals are intended to articulate clearly what students are expected to know and/or be able to do as a result of completing a program. Learning objectives, which are more specific, are derived from learning goals and typically are the basis for efforts to measure students' progress in achieving the desired outcomes. Because of the importance of general education in students' undergraduate education, development of learning goals for general education has been a priority for most institutions.

The survey for this study asked institutions whether they have developed a set of learning goals or objectives for their general education programs and asked them to submit a copy of the goals/objectives as part of their response. Fifty-seven of the participating institutions reported that they have developed learning goals. Two reported that they have not: Dominion College and Southwest Virginia Community College, although the latter reported that it uses

the eight elements of the Virginia Community College System's general education policy statement for this purpose. Five institutions, including at least one from each institutional category, reported that they are in the process of developing learning goals: George Mason University, Germanna Community College, Hollins University, Virginia Intermont College, and National Business College. The average number of learning goals per institution was eight, with a low of five among the private for-profit institutions and a high of 11 among the private not-for-profit institutions.

	Have goals	Do not have goals	Goals in process	Have objectives	Avg. # of goals	Avg. # of objectives
Public 4-year (N = 15)	14	0	1	8	7	43
Public 2-year (N = 24)	22	1	1	12	8	17
Private not-for-profit (N = 18)	16	0	2	3	11	44
Private for-profit (N = 7)	5	1	1	0	5	
All institutions (N = 64)	57	2	5	23	8	30

TABLE 4
Learning goals and objectives

The nature of the lists of learning goals submitted varied greatly. At one end of the spectrum some institutions pointed to very general statements similar to what might be found in an institutional mission statement or rationale statement. The University of Virginia, for example, referenced certain pages from its undergraduate catalog describing its competency requirements (composition and foreign language) and area requirements. Those pages contained no articulation of what a student should know or be able to do as a consequence of completing the prescribed distribution of courses; they state simply that "the requirements for these degrees introduce students to a broad spectrum of knowledge and are intended to allow them to develop the skills and habits of learning, disciplined thinking, and articulate expression." Similarly, Virginia Military Institute's response lists four goals for all core courses: "critical thinking and reading; precision in written and oral communication; academic and professional ethics; and commitment to lifelong learning and physical health." Institutions without well-developed learning goals would not be likely to have developed learning objectives, which are more specific and usually derived from the goals.

At the other end of the spectrum are institutions with elaborate structures of goals and objectives, such as James Madison University (5 goals and 78 objectives), Virginia Tech (7 goals and 47 objectives), Lynchburg College (16 goals and 64 objectives), and Randolph-Macon College (10 goals and 62 objectives). For institutions that have derived learning objectives from their learning goals, the average number of objectives was almost identical between public four-year institutions (43) and private, not-for-profit four-year institutions (44). Clinch Valley College has 36 "proficiency statements" which serve a similar purpose.

A good example of a public institution that is in the middle of the spectrum is Radford University, which has six "general goals" for its general education program and 34 "specific goals" (comparable to learning objectives) in eight

clusters that constitute the eight broad areas of study of the general education program (communication, fine arts, foreign languages, humanities, lifestyle development, mathematics, physical and natural sciences, and social and behavioral sciences). The six general goals are as follows:

> Upon completion of the General Education Program, students should be able to:
> - Think clearly and creatively about ideas, issues, and texts both within and across academic disciplines.
> - Raise relevant and insightful questions within and across academic disciplines.
> - Construct logical and persuasive arguments.
> - Employ a variety of research methods and styles of inquiry.
> - Use appropriate computer technologies to gather and organize information, to solve problems, and to communicate ideas.
> - Work with others in a shared process of inquiry and problem-solving.

The specific goals for Physical and Natural Sciences are as follows:

> Upon successful completion of this area of the curriculum, students should be able to:
> - Comprehend the empirical nature of science.
> - Identify scientific problems and apply scientific methods.
> - Extend scientific problem-solving skills to a variety of situations.
> - Relate the basic principles of science to the world at large.
> - Understand the relations between science, technology, and society.

Similar specific goals are set forth for each of the seven other areas.

The public two-year institutions had an average of 17 objectives, less than half as many as the four-year institutions. These objectives typically were derived from the eight elements of the Virginia Community College System's policy on general education. Development of learning objectives based on these elements is a responsibility of the individual community colleges. J. Sargeant Reynolds Community College, for example, has developed a list of 20 "general education outcomes" in six clusters (communication skills; interpersonal skills; mathematics and manipulation of symbolic and quantified data; analysis/problem-solving and critical thinking; fields of knowledge; and values, ethics, and responsibilities in a democratic society).

The private for-profit institutions have an average of five learning goals, and none reported having developed a set of learning objectives derived from those goals. These learning goals tend to emphasize job-related skills. Typical is the list submitted by Bryant and Stratton College, as excerpted from its catalog:

> To succeed in the modern work force you [the student] must be able to integrate into your everyday work routine the ability to utilize multiple resources. You must be able to evaluate, interpret, and use information; to function within complex social and technical systems; to integrate the use of technology into your job responsibilities; and to work as part of a team to accomplish tasks, to provide instruction to others, to negotiate, and to serve customers. You must also be able to transfer your skills from one job to another.

1.4 Content versus skills

The traditional approach to the general education component of the undergraduate curriculum is to require students to take, or select from a series of, courses that cover defined areas of content knowledge, such as history, math and science. Because of the increasing emphasis on what students can do, as well as on what they know, as a result of their general education experience, an alternative approach that has gained in popularity is to require students to acquire certain defined skills, such as writing, quantitative analysis, and ethical reasoning. Many institutions seek to impart a combination of content knowledge and skills through their general education programs. In addition, a few institutions use other approaches, such as requiring students to become familiar with the methodology or "approaches to knowledge" of various disciplinary groups (*e.g.*, the scientific method, the historical method, etc.).

In response to the survey for this study, institutions placed their learning goals/objectives on a continuum, ranging from "stated almost entirely in terms of content knowledge" to "stated almost entirely in terms of skill development." Intermediate choices were "primarily content knowledge with some skill

development," "equally in terms of skill development and content knowledge," and "primarily skill development with some content knowledge." In addition, a space was provided for "other" approaches. A separate question provided an opportunity for listing any individual learning goals/objectives that are neither content-oriented nor skills-oriented. Table 5 displays how institutions responded to this issue.

	Mostly content	Primarily content	Equally	Primarily skills	Mostly skills	Other	No response
Public 4-year (N = 15)		3	11			1	
Public 2-year (N = 24)		4	14	5	1		
Private not-for-profit (N = 18)		8	6	2		1	1
Private for-profit (N = 7)			1	4			2
All institutions (N = 64)		15	32	11	1	2	3

TABLE 5
Content versus skills

Half of all institutions indicated that their learning goals/objectives are stated equally in terms of content knowledge and skill development. Among the public four-year institutions, this was by far the predominant choice (11 of 15), with three choosing "primarily content knowledge with some skill development." One institution, Longwood College, chose "other," with the explanation that learning goals refer to content, while the criteria for general education courses refer to skill development. None of the public four-year institutions indicated that their learning goals are stated primarily or almost entirely in terms of skills development. A majority of the public two-year institutions (14 of 24) also reported that their learning goals are stated equally in terms of content knowledge and skill development, although more of these institutions (six) reported an orientation towards skill development than towards content knowledge (four).

With respect to the private not-for-profit institutions, two patterns emerge when comparisons are made with other institutions. First, half of the private not-for-profit institutions (eight of 16 responding to the question) indicated that their learning goals were stated primarily in terms of content, a pattern that contrasted with the responses of the public four-year institutions discussed in the preceding paragraph. Second, a clear division existed between the responses of the private not-for-profit institutions and the private for-profit institutions, with a majority of the latter (four of the five responding to the question) indicating that their learning goals were stated primarily in terms of skill development. One private not-for profit institution, the University of Richmond, checked "other' but did not specify the nature of its program

This study asked institutions whose learning goals are stated wholly or partly in terms of content knowledge to indicate which content areas they require. The survey offered a list of 13 choices, with allowance for specifying "other"

areas. A similar question asked institutions whose learning goals are stated wholly or partly in terms of skill development to select from a list of eight choices and an "other" category. Part Two of this study, covering the structure of general education curricula, will detail credit-hour requirements for each institution. Here, aggregate data summarize the responses of institutions by institutional type. Table 6 covers content areas, and Table 7 covers skill areas. (N.B. Since several institutions checked that they required students to take content courses or attain skills in certain disciplinary areas but did not list associated credit requirements, the numbers in several categories in Tables 6 and 7 do not correspond with the numbers of institutions requiring credits in the same areas, as detailed in Part Two. In addition, the community colleges differed in how they described their curricula, but all graduates must meet the requirements set by the Virginia Community College System. These requirements are shown in Appendix III.)

	Public 4-year (N = 15)	Public 2-year (N = 24)	Private not-for-profit (N = 18)	Private for-profit (N = 7)	All institutions (N = 64)
Social sciences	14	23	18	4	59
Natural sciences	14	21	18		53
Mathematics	12	19	14	3	48
Health/physical education	11	20	13		44
History	11	18	12		41
Humanities	9	18	11	4	42
Literature	11	12	15		38
Communications	9	15	5	4	33
Fine arts	12	6	14		32
Foreign languages	9	5	8		22
Other	8	3	11		22
Technology	4	12	3		19
Ethics	8	1	9		18
International studies	3	0	6		9

TABLE 6
General education requirements by content area

The content area required by the largest number of institutions (59 of 64) is the social sciences. Virginia Military Institute stands alone among the 33 public four-year and private not-for-profit institutions in not having a social sciences requirement. The remaining four institutions which did not check social sciences (Dabney S. Lancaster Community College, Bryant and Stratton College, Dominion College, and National Business College) were institutions that did not

check any of the content areas listed. The second most frequently checked content area is the natural sciences. The University of Virginia stands alone among the 33 public four-year and private not-for-profit institutions in not having a natural sciences requirement, although it does require students to satisfy a mathematics/natural science requirement, and its internal analysis indicates that all of its students take at least six credits of natural and physical sciences. The remaining ten institutions that did not check natural sciences were Dabney S. Lancaster Community College, Lord Fairfax Community College, Piedmont Virginia Community College, and all seven private for-profit institutions.

Eleven of the 15 public four-year institutions reported that they require students to take history. The four that do not have such a requirement are Clinch Valley College, George Mason University, Mary Washington College, and Virginia Commonwealth University. Among the public two-year institutions, four (Lord Fairfax Community College, Piedmont Virginia Community College, Rappahannock Community College, and Southside Virginia Community College) lack a history requirement. Southwest Virginia Community College reported that it requires all transfer students other than those in engineering to take history. Six of the 18 private not-for-profit institutions do not require history: the College of Health Sciences, Eastern Mennonite University, Emory and Henry College, Hollins University, Mary Baldwin College, and Sweet Briar College. None of the seven private for-profit institutions has this requirement.

Half of the two-year institutions (12 of 24) reported that they have a content-related technology requirement, while only seven of the 33 public four-year and private not-for-profit institutions have such a requirement. None of the seven private for-profit institutions has this requirement. Institutions listed a wide variety of requirements under the "other" heading; the most frequently mentioned were Western civilization or heritage, a non-Western culture or cultural diversity requirement, and philosophy/religion.

	Public 4-year (N = 15)	Public 2-year (N = 24)	Private not-for-profit (N = 18)	Private for-profit (N = 7)	All institutions (N = 64)
Writing skills	15	22	18	6	61
Mathematical reasoning/ quantitative analysis	14	23	17	6	60
Oral communication skills	12	19	13	5	49
Computer/technology skills	12	23	10	1	46
Critical thinking skills	12	15	9	5	41
Ethical reasoning skills	8	9	9	1	27
Foreign-language skills	11	5	10	0	26
Library research skills	8	11	3	4	26
Other	7	13	4	1	25

TABLE 7
General education requirements by skill area

Among the skill areas listed, writing skills was the most frequently checked category, with 61 of the 64 institutions indicating that they have a requirement that students gain writing skills as part of the general education experience. The three institutions that did not check this item were John Tyler Community College, Thomas Nelson Community College, and National Business College, although Thomas Nelson Community College later reported that it does require students to attain writing competencies. A close second was mathematical reasoning/quantitative analysis, which 60 of the 64 institutions checked. The four institutions that did not check this item were one each from the four categories of institutions: the University of Virginia (again because of its combined mathematics/natural science requirement), Germanna Community College, Hampden-Sydney College, and National Business College. The most frequently cited examples of "other" skill areas were use of the scientific method/scientific problem-solving; creative or artistic processes; wellness/physical-education skills; and interpersonal-relations skills.

Several institutions reported that they have one or more learning goals/objectives that are neither content-oriented nor skill-oriented. Virginia Commonwealth University cited its learning goal entitled "Interdependence": "Students should be able to demonstrate an awareness of the cultural, economic, informational, and social interdependencies that exist among nations and cultures today." Virginia Military Institute pointed to its unique military training. George Mason University listed its non-Western culture requirement, and

Randolph-Macon Woman's College cited its women's studies and cultural studies requirements. The University of Richmond stated that it has an explicit focus on "ways of thinking" and "methods of analysis" within six different fields of study. Bridgewater College cited a "personal development portfolio," which is divided into eight dimensions of personal growth. Sweet Briar College noted its "required reflective essays."

1.5 Implementation strategies

Once an institution has a mission statement for the institution as a whole, a rationale statement for its general education program, and learning goals and objectives in place, it still must monitor how well the program is performing and whether it is producing the desired educational outcomes. Institutions have developed a variety of strategies to seek to ensure that their learning goals are met. Among the most common are development of criteria for selection of courses to be included in the general education program; initiatives to teach certain themes "across the curriculum" rather than in isolated courses; and a variety of special curricular features, such as capstone and honors courses.

Criteria for courses

The survey for this study asked whether the institution had announced criteria for courses to be designated as satisfying its general education requirements. This question was based on some institutions specification of criteria for courses to meet general education requirements, rather than allowing all courses offered within a discipline to satisfy an area requirement. At these institutions, there is an expectation that courses designated for this purpose will have certain characteristics, such as having a breadth of scope or addressing one or more of the learning goals developed for that disciplinary area of the general education program. Of the 64 reporting institutions, just more than half (33) responded that they have announced such criteria, and almost half (30) responded that they have not, while one institution (Radford University) is in the process of developing criteria. Among the public four-year institutions, only Virginia Military Institute had not announced criteria. Of the 33 institutions that have announced criteria, several did not supply a copy of the criteria as requested, and their responses suggest that their criteria may be implicit (based on their learning goals) rather than explicit. Of institutions that submitted a copy of their explicit criteria, Old Dominion University was typical; its format for submission of proposals for general education courses requires that proposals (1) explain what methods will be used to meet each of four general learning goals; (2) explain what methods will be used to ensure that the course is an academically rigorous and substantive introduction to the discipline involved; and (3) explain what methods will be used to attain the special learning goals of that disciplinary area.

Themes taught across the general education curriculum

Another strategy for seeking to ensure that learning goals are met is to give special emphasis to certain instructional themes "across the curriculum" rather than in isolated courses. This approach originated with efforts to teach writing in a variety of courses rather than entirely in composition courses. Success in these efforts led to similar efforts for instructional themes which proponents believed should be "infused" in all areas of inquiry rather than being restricted to individual courses, such as global perspectives, ethical reasoning, and gender-related issues. The survey for this study offered a list of ten instructional themes often pursued "across the curriculum" -- computer literacy, critical thinking, ethics or ethical reasoning, gender studies, global studies/international studies, multicultural studies, oral communications, science, technology, and writing. Institutions were asked to check those themes that are given special emphasis across the curriculum in their general education programs. "Other" was given as an eleventh choice. Table 8 summarizes the responses to this question.

	Public 4-year (N = 15)	Public 2-year (N = 24)	Private not-for-profit (N = 18)	Private for-profit (N = 7)	All institutions (N = 64)
Writing	13	12	15	5	45
Critical thinking	11	16	8	5	40
Computer literacy	10	14	8	2	34
Oral communications	8	8	11	5	32
Ethics/ethical reasoning	6	6	7	1	20
Global studies/ international studies	6	8	5	1	20
Other	5	8	2	4	19
Multicultural studies	4	5	3	1	13
Technology	3	4	4	1	12
Science	3	2	2	0	7
Gender studies	1	1	2	1	5

TABLE 8
Themes taught across the general education curriculum

Of the 64 institutions participating in this part of the study, nine reported having no instructional themes taught across the curriculum. Those nine included two public four-year institutions (the University of Virginia and Virginia Commonwealth University), four public two-year institutions (Dabney S. Lancaster Community College, Eastern Shore Community College, John Tyler

Community College, and Virginia Western Community College), one private not-for-profit institution (Virginia Intermont College), and two private for-profit institutions (Dominion College and World College). At the other end of the spectrum, one institution (Norfolk State University) reported that it teaches all ten

themes across the curriculum, and another (Virginia State University) teaches nine of the ten, all except gender studies. Both institutions have specific credit requirements in some areas (e.g., writing and science) as well as teaching these areas across the curriculum.

Writing is the instructional theme most frequently taught across the curriculum. Forty-five of the 54 institutions that use this curricular strategy reported that they teach writing across the curriculum. The nine that do not include seven community colleges and two private not-for-profit institutions (Lynchburg College and Randolph-Macon College). Critical thinking is the second most frequently taught theme using this strategy, with 40 of the 54 institutions reporting its use. Computer literacy was the next most common instructional theme across the curriculum, with more than half of institutions incorporating it. Among those who chose the "other" option, the most frequently cited themes were library research skills and interpersonal skills.

Special features

Of the 64 institutions participating in this part of the study, five reported having no special features in their general education programs. Those four included institutions from three categories: two public two-year institutions (Central Virginia Community College and Paul D. Camp Community College), one private not-for-profit institution (Randolph-Macon Woman's College), and one private for-profit institution (National Business College). By contrast, the University of Virginia reported that its general education curriculum has eight of the ten special features listed in the following table, excepting only capstone courses and non-web-based distance-education courses.

	Public 4-year (N = 15)	Public 2-year (N = 24)	Private not-for-profit (N = 18)	Private for-profit (N = 7)	All institutions N = 64)
Honors courses	13	10	8	0	31
Web-based courses	6	15	2	0	23
Distance education courses	1	17	2	1	21
Freshman seminar	4	4	11	0	19
Independent study	5	10	3	1	19
Interdisciplinary core courses	7	3	7	2	19
Service learning	7	3	4	2	16
Capstone courses	0	2	5	4	11
Internships	3	2	2	1	8
Other	2	2	3	1	8
Senior seminar	3	0	1	1	5

TABLE 9
Special features of general education programs

Honors courses constitute the special feature most frequently cited in the responses to this question. Approximately half of the institutions that use special features as a curricular strategy (31 of 59) reported that they have honors courses as part of their general education curricula. Among the public four-year institutions, only two (Mary Washington College and Virginia Military Institute) reported that they do not have honors courses as a special feature of their general education programs. Less than half of the private not-for-profit institutions (8 of 18) have honors courses, and none of the private for-profit institutions have them.

The next two most frequently cited special features were web-based courses and non-web-based distance-education courses. These types of instruction are most popular among the public two-year institutions, with a majority (15 and 17 of 24) reporting that they use them.

Freshman seminars, independent study, and interdisciplinary core courses were the next three most common special features, with 19 institutions using each. In keeping with their mission to offer small classes and a low student/faculty ratio, the private not-for-profit institutions prefer this feature, with 11 of the 18 institutions reporting that they offer freshman seminars. Among the public four-year institutions, only four (Clinch Valley College, the College of William and Mary, George Mason University, and the University of Virginia) do so. None of the private for-profit institutions offer freshman seminars as part of their general education programs.

Independent study, in which a student pursues an individually arranged course of study under the supervision of a faculty member, is an almost universal feature of college curricula. It is most often found in upper-division courses within the major. However, independent study is also an option within many general education programs. This feature was found most often within the community colleges, with ten reporting that they offer it. Five public senior institutions (the College of William and Mary, Norfolk State University, the University of Virginia, Radford University, and Virginia Tech) have independent study as an option within their general education programs, as do three private not-for-profit institutions (the College of Health Sciences, Emory and Henry College, and Saint Paul's College) and World College, a private for-profit institution. Later in this report, readers will see that very few students actually enroll in these courses for general education credit.

Interdisciplinary core courses are designed to assist students in making connections between and among otherwise disparate subjects within their course of study. Interdisciplinary core courses are a common feature of general education programs and are offered at approximately half of the public four-year institutions (Clinch Valley College, George Mason University, James Madison University, the University of Virginia, Virginia Commonwealth University, Virginia Military Institute, and Virginia State University) and at an equal number of private not-for-profit institutions. This option also was available at three community colleges (Eastern Shore, Lord Fairfax, and Piedmont Virginia) and two private for-profit institutions (Bryant & Stratton College and Dominion College).

Among those who chose the "other" option, there were a variety of responses, including travel courses (Northern Virginia Community College), an exit writing proficiency examination (Old Dominion University), a cross-cultural experience (Eastern Mennonite University), a required self-evaluation (Sweet Briar College), "weekend college" courses (Virginia Western Community College), and special seminars and experiential learning offered in the January short term (Hollins University)

Part Two: The structure of general education programs

This part of the study focuses on findings related to the structure of general education programs in Virginia. In this part is discussion of the number of credits each institution required in its general education program during the 1997-98 academic year, how that number of required credits varied by the type of degree awarded, whether institutions required upper-division credits, how institutions allocated those credits among different subject areas, and institutional practices regarding prerequisites, course sequencing, and testing/placing out of general education requirements.

2.0 Characterization of the structure of general education programs

The survey for this study asked each institution to select from a list of six typical structures of general education programs the single choice that best described the structure of the institution's program. The survey offered these choices:

- A common set of required courses that all students take;
- A set of content-oriented areas with course options in each area;
- A set of skills-oriented areas with course options in each area;
- A mixture of required courses and courses that are part of the major;
- No requirements are set; and
- Other.

	Public 4-year (N = 15)	Public 2-year (N = 24)	Private not-for-profit (N = 18)	Private for-profit (N = 7)	All institutions (N = 64)
A set of content-oriented areas with course options	10	10	15	0	35
A common set of required courses	2	3	1	7	13
A set of skills-oriented areas with course options	1	5	0	0	6
A mixture of required and major courses	0	5	0	0	5
Other	2	1	2	0	5
No requirements are set	0	0	0	0	0

TABLE 10
Characterization of structure

The description chosen by a majority of the institutions (35 of 64) was "a set of content-oriented areas with course options." This choice was especially favored by the four-year institutions, with 10 of the 15 public four-year institutions and 15 of the 18 private not-for-profit institutions selecting it. This also was the most frequent choice among the public two-year institutions, with ten of the 24 describing their general education-programs as content-oriented with course options. None of the private for-profit institutions selected this choice.

The second most frequently chosen description was "a common set of required courses that all students take." Among the public four-year institutions, only two (Norfolk State University and Virginia Military Institute) described the structure of their program in this way. Three community colleges (Central Virginia, Paul D. Camp, and Virginia Highlands) described their general-education programs in this way. Emory and Henry College was the only private not-for-profit institution to make this choice. Notably, all of the private for-profit institutions described their general education programs as a common set of required courses that all students take; these institutions typically offer a more limited range of courses, and students have less choice about what to take.

Virginia State University described its program as "a set of skills-oriented areas with course options." Old Dominion University described its general education as "other" and noted that it is a combination of skills courses, content-oriented perspective areas with course options, and upper-division requirements. The remaining public four-year institution, James Madison University, also described its program as "other." James Madison's newly implemented program is divided into five cluster areas, each of which has common learning objectives. Students choose a package of linked or sequenced courses in each cluster.

None of the offered choices provided a uniform description of the general education programs at the public two-year colleges. Although the greatest number (9) selected "a set of content-oriented areas with course options," the choices of the remaining 15 institutions were almost evenly divided among the next three options. Four selected "a common set of required courses," while five selected "a set of skills-oriented areas with course options," and five selected "a mixture of required and major courses." One public two-year institution, Dabney S. Lancaster Community College, checked "other," but did not specify what it believed to be the best descriptor of its general education program.

Two private not-for-profit institutions, Hollins University and the University of Richmond, described the structure of their program as "other." Hollins indicated that its program was a combination of skill components and content-oriented courses, while the University of Richmond reported that its program consisted of a foundation course, a set of communication-skills courses, a basic health course, and a set of optional courses within six fields of study.

2.1 Total number of credits required

All of the public institutions, both four-year and two-year, and all of the private not-for-profit institutions that participated in this study are accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (SACS). Section 4.2.2 of that association's *Criteria for Accreditation* requires a basic core of general education courses amounting to a minimum of 15 semester hours for associate-degree programs and a minimum of 30 semester hours for baccalaureate-degree programs. The seven private for-profit institutions participating in this study are accredited by three separate accrediting bodies, all of which have comparable requirements.

As part of their response to the survey, institutions were asked to state the total number of credits required in their general education program. Eight of the 15 public four-year institutions reported that they required a set number of total credits in general education for all degrees. The average number of credits required by these eight institutions was 46.5. The number of credits required by six of these eight institutions was between 48 and 52 credits. The other two were somewhat lower, with Longwood College the lowest at 33 credits and Norfolk State University the next lowest at 40 credits.

The remaining seven of the public four-year institutions reported credit ranges, with the lower end of the range applicable to students who earn degrees outside of the arts and sciences (*e.g.*, in engineering or health) or to students who come to the institution with a demonstrated proficiency. For example, at Virginia Commonwealth University, students in some professional schools (*e.g.*, health and business) can earn as few as 30 credits to meet general education requirements, while students in the College of Humanities and Science must earn 60 credits. Some institutions have a range even for students within the same unit, based upon a demonstrated proficiency. For example, the College of William and Mary stated that it had a range of from 41 to 70 credits; the precise number depended upon such factors as what the students has had in terms of foreign languages and Advanced Placement credits, whether any of the courses the student takes satisfy more than one area requirement, and the precise mix of three-credit and four-credit courses. The University of Virginia included 30 credits of major courses within the 74 to 80 general education credits it reported as required, so its range is from 44 to 50 credits.

Students in transfer-level programs within the Virginia Community College System must earn a minimum of 37 credits for the Associate in Science and Associate in Arts and Sciences degrees and 46 credits for the Associate in Arts degree. The occupational-technical (Associate of Applied Science) programs in the community colleges require 17 credits in general education. Table 11 shows the total number of credits in general education required by each of the public four-year and public two-year institutions.

	Set number of credits required	Minimum in range of credits	Maximum in range of credits
PUBLIC 4-YEAR			
Christopher Newport University	51		
Clinch Valley College	52		
College of William and Mary		41	70
George Mason University		33	63
James Madison University		40	43
Longwood College	33		
Mary Washington College	49		
Norfolk State University	40		
Old Dominion University		42	54
Radford University	50		
University of Virginia		44	50
Virginia Commonwealth University		31	63
Virginia Military Institute	49		
Virginia Polytechnic Institute & S.U.		39	41
Virginia State University	48		
PUBLIC 2-YEAR			
Richard Bland College	48		
Virginia Community College System (transfer programs)		37	46
Virginia Community College System (non-transfer programs)	15		

TABLE 11
Number of credits required by public institutions

Twelve of the 18 private not-for-profit institutions reported that they required a set number of credits in general education for all degrees. The average number of credits required by these 12 institutions was 50, slightly higher than the average of 46.5 reported by the public four-year institutions. Mary Baldwin College required the most credits in general education at 68, while Hollins University required the least at 32. The remaining six of the private not-for-profit institutions reported credit ranges, with the largest number of credits required by Bridgewater College (a range of from 58 to 64) and Lynchburg College (a range of from 58 to 63). The College of Health Sciences reported a range of from 32 to 60 credits, but the lower end of that range is for its associate-degree programs, while 60 credits are required for its baccalaureate-degree programs.

The seven private for-profit institutions also provided the number of credits required in their general education programs. These institutions were divided evenly between those that required 15 to 17 credits (all three branches of ECPI, which offer occupational-technical programs) and those that required 31 to 32 credits (Bryant and Stratton College, Dominion College, and World College). Of these institutions, Dominion College offers only occupational-technical programs, while the other two offer either transfer-level associate degrees or bachelor's degrees. The seventh institution, National Business College, was in the middle at 24 credits. That institution offers a bachelor's degree and is the institution with the fewest general education credits for such a degree. Table 12 shows the total number of credits required in general education at both the private not-for-profit and the private for-profit institutions.

	Set number of credits required	Minimum in range of credits	Maximum in range of credits
PRIVATE NOT-FOR-PROFIT			
Averett College		39	58
Bridgewater College		58	64
College of Health Sciences		32	60
Eastern Mennonite University	49		
Emory and Henry College	39		
Hampden-Sydney College	52		
Hollins University	32		
Liberty University	55		
Lynchburg College		58	63
Mary Baldwin College	68		
Marymount University	54		
Randolph-Macon College	50		
Randolph-Macon Woman's College	42		
Saint Paul's College	57		
Sweet Briar College		43	45
University of Richmond	46		
Virginia Intermont College		48	49
Washington and Lee Univ.	56		

TABLE 12
Number of credits required by private institutions

(Table continued on the next page)

PRIVATE FOR-PROFIT			
Bryant & Stratton College	32		
Dominion College	32		
ECPI - Richmond	15		
ECPI - Roanoke		15	17
ECPI - Virginia Beach/Hampton		15	17
National Business College	24		
World College	31		

TABLE 12, continued
Number of credits required by private institutions

2.2 Variation of total credit requirements by type of degree

In the survey for this study, institutions were asked whether their general education requirements varied according to the type of degree sought. Eleven of the public four-year institutions reported that their general education requirements did not vary, but remained the same for all degree programs. The remaining four institutions (George Mason University, Mary Washington College, the University of Virginia, and Virginia Commonwealth University) reported variation by degree type, with programs in the arts and sciences requiring more general education credits than those in applied fields (*e.g.,* engineering, business, fine arts, or health). The number of general education credits required for the applied bachelor's degrees ranged from 30 to 48, while the credits required for graduation from those programs ranged from 120 to 140.

All of the public two-year institutions except Rappahannock Community College reported that general education requirements in associate-degree programs varied by degree type. J. Sargeant Reynolds Community College reported that it had 30 associate-degree programs with separate general education requirements, the largest number. The number of credits required in general education for the transfer-level associate-degree programs ranged from 37 (Associate of Arts and Sciences, Associate of Science) to 46 (Associate of Arts), with the number of credits required for graduation from these programs usually ranging from 60 to 63. The number of credits required in general education for the occupational-technical associate-degree programs ranged from 17 to 30, with the number of credits required for graduation from these programs ranging from 65 to 70.

Ten of the 18 private not-for-profit institutions reported that their general education requirements did not vary by degree sought. Of the remaining eight institutions, seven indicated that the general education requirements for the bachelor's degree varied, with from two to seven separate bachelor's degrees offered. Three of these institutions indicated that general education requirements

for the associate degree varied, with from two to six separate associate degrees offered. The number of general education credits required for the bachelor's degree at institutions with variation by degree ranged from a low of 39 at Averett College to a high of 64 at Bridgewater College.

Four of the seven private for-profit institutions indicated that their general education requirements did not vary. Of the remaining three, National Business College had only one bachelor's degree with separate requirements, while Bryant and Stratton College, Dominion College, and National Business College had respectively one, three, and 24 associate degrees whose general education requirements vary. The number of general education credits required for the occupational technical associate degree at these institutions ranged from 23 to 33 and for the transfer-level associate degree from 23 to 27. The number of credits required for graduation for both degrees was 64. These institutions do not offer transfer-level programs.

2.3 Distribution of requirements by undergraduate division

Four-year institutions reported on whether their general education programs were designed to be primarily in the first two years of the curriculum, to be mostly in the first two years with a few courses in the last two years, or to be evenly distributed over all four years. Six of the 15 public four-year institutions designed their general education programs primarily for the first two years, and eight designed their programs to be mostly in the first two years with a few courses in the last two years. The University of Virginia was the only institution of this type that reported that its program was designed for even distribution of courses over a four-year period; however, that is likely because the University of Virginia considers coursework in the major to be part of its general education program. Most students take the 44 to 50 credits that constitute their general education program during their first two years, followed by the upper-division credits related to the major.

Three of the 18 private not-for-profit institutions designed their programs to be primarily for the first two years, and thirteen designed theirs to be mostly in the first two years with a few courses in the last two years. The remaining two (Randolph-Macon Woman's College and Sweet Briar College) responded that their programs are designed for even distribution of courses over a four-year period.

The public two-year colleges also responded about the distribution of requirements in their general education programs. All 24 institutions reported that they designed the general education curriculum in their transfer-level associate-degree programs to be evenly distributed through both years of the curriculum. Programs at the private for-profit institutions are not designed for transfer.

The survey asked four-year institutions whether upper-division courses or study were required in their general education programs. About half of the public four-year institutions (seven of 15) responded that they required credits in upper-division courses, while nine institutions responded that students may elect to take upper-division courses to meet general education requirements. Of the seven that required upper-division courses, one required one credit, two required three credits, two required a range of up to 12 credits, and one (Virginia Military Institute) required 23 credits in upper-division courses. The University of Virginia reported that it required upper-division courses, but the number of credits varied with the major. This requirement was found primarily in writing-intensive courses and in areas such as interdisciplinary studies, speech, military science, and ethics.

Seven of the 18 private not-for-profit institutions stated that they required upper-division courses in their general education programs, while five of these institutions reported that students may elect to take upper-division courses to meet general education requirements. Institutions with the greatest number of credits required in upper-division courses were Eastern Mennonite University at eight, Saint Paul's College at nine, and the College of Health Sciences with a range of from six to 12. The areas in which upper-division courses are required by the private not-for-profit institutions include the humanities, faith, value inquiry, global studies, philosophy, psychology, and life and culture.

2.4 Courses required of all students

The survey for this study asked institutions to list courses that are required of all students. As detailed in Section 2.2 above, at 26 of the 64 participating institutions all students who earn undergraduate degrees have the same general education requirements, while at the other 38 students in professionally oriented programs such as business, engineering, the fine arts, or health have different or fewer general education requirements than do students in the arts and sciences. To reflect these differences, the survey asked institutions to provide a list of courses required of all students and a list of courses required of students in the arts and sciences. With the exception of three four-year institutions (Hampden-Sydney College, Hollins University, and James Madison University) and four two-year institutions (Mount Empire, Patrick Henry, Rappahannock, and Virginia Western Community Colleges), all institutions reported that they required all students to take one or more courses in common. A listing of the courses that are required of all students at each institution is given in Table 13.

Virginia State University, Southside Virginia Community College, Averett College, the College of Health Sciences, Eastern Mennonite University, Emory and Henry College, Marymount University, Randolph-Macon College, Sweet Briar College, the University of Richmond, and Bryant and Stratton College each require all students to take four courses in common. The few institutions that

require more than four courses in common include Norfolk State University (five courses); Liberty University (nine courses); Roanoke College and World College (ten courses each), and Saint Paul's College, which requires its students to take 19 courses in common. Virginia Military Institute also requires that its students take ten courses in common, but five of these are one-half credit physical-education courses.

Among the most common courses required of all students is writing, with all institutions except the seven institutions with no courses required of all students, the College of Health Sciences, and Eastern Mennonite University requiring students to take specific writing courses. All of the community colleges reported that they required College Composition I for all students and College Composition II for either all students or all students in the arts and sciences. At the community colleges, the students in arts and sciences programs comprise the bulk of students in the community college's transfer programs.

Table 13

Courses required of all students or of students in arts and sciences (or comparable unit)
Public four-year Institutions

	Courses required of all students	Courses required of all students in the arts and sciences
CNU	College Writing I, College Writing II	
CVC	Composition, Composition II	
CWM	Freshman Seminar	
GMU	Composition, Advanced Composition	
JMU	None	
LC	Rhetoric and Research, Composition and Literary Analysis	
MWC	Writing Workshop	
NSU	Communication Skills I, Communication Skills II, Personal and Community Health, Fundamentals of Fitness for Life, Principles of Speech	
ODU	English Composition	
RU	Introduction to Expository Writing; Reading, Writing, and Research Skills, Introductory Psychology	
UVA	Composition	
VCU	Composition and Rhetoric I, Composition and Rhetoric II	
VMI	English Composition I, English Composition II, World History I, World History II, Basic Swimming and Survival, Boxing, Drug and Alcohol Abuse Awareness, Principles of Physical Conditioning, Wresting, Speech	
VPISU	Freshman English I, Freshman English II	
VSU	Freshman Writing, Reading and Writing about Literature I, Personal Health	

Table 13, continued

Courses required of all students or of students in arts and sciences (or comparable unit)

Public two -year Institutions

	Courses required of all students	Courses required of all students in the arts and sciences
RBC	Writing and Research, Introduction to Literary Genres	
BRCC	College Composition I, College Composition II, Principles of Public Speaking	
CVCC	College Composition I	
DCC	College Composition I, College Composition II, Precalculus I	
DSLCC	College Composition I	College Composition II
ESCC	College Composition I, College Composition II	Precalculus I, Precalculus II, Principles of Public Speaking
GCC	College Composition I, College Composition II	
JSRCC	College Composition I, College Composition II	
JTCC	College Composition I	College Composition II
LFCC	College Composition I	College Composition II, Principles of Public Speaking
MECC	None	College Composition I, College Composition II
NRCC	College Composition I, College Composition II, Public Speaking	
NVCC	Lifetime Fitness and Health	College Composition I, College Composition II
PDCCC	College Composition I, College Composition II	
PHCC	None	College Composition I, College Composition II, Survey of American Literature I, Survey of English Literature I, Precalculus I, Introduction to Speech

Table 13, continued

Courses required of all students or of students in arts and sciences (or comparable unit)

Two -Year Public Institutions

	Courses required of all students	Courses required of all students in the arts and sciences
PVCC	College Composition I, College Composition II	
RCC	None	College Composition I, College Composition II, Principles of Public Speaking
SSVCC	College Composition I, College Composition II, Precalculus I, Precalculus with Introductory Calculus	
SWVCC	College Composition I, College Composition II	Principles of Public Speaking
TCC	College Composition I, College Composition II	Principles of Public Speaking
TNCC	College Composition I, College Composition II,	Principles of Public Speaking
VHCC	College Composition I, College Composition II, Principles of Public Speaking	
VWCC	None	College Composition I, College Composition II, Principles of Public Speaking
WCC	Orientation	College Composition I, College Composition II, Principles of Speech

Private not-for-profit institutions

	Courses required of all students	Courses required of all students in the arts and sciences
Averett	Introduction to Writing and Research, Introduction to Literature, History of Western Civilization I, Western Civilization II	

Table 13, continued

Courses required of all students or of students in arts and sciences (or comparable unit)
Private not-for-profit institutions

	Courses required of all students	Courses required of all students in the arts and sciences
Bridgewater	English Composition, Composition and Literature Forms	
College of Health Sciences	Grammar and Composition I, College Survival Skills, Ethical and Legal Decision Making in Health Care, Social Issues in Health Care Delivery	
Emory and Henry	Writing, Freshman Western Traditions I, Freshman Western Traditions II, Great Books	
Eastern Mennonite	Cross-Cultural Understandings, Faith in Christian Heritage, Faith and Praxis, Issues and Values	
Hampden-Sydney	None	
Hampton	World Civilization II, Humanities, Humanities II, The Individual and Life	
Hollins	None	
Liberty	Evangelism and Christian Life, Speech Communication, Grammar and Composition, Composition and Literature, Contemporary Issues I, Contemporary Issues II, Philosophy and Contemporary Ideas, Theological Survey I, Theological Survey II	
Lynchburg	Freshman English, History of Civilization, Exercise Concepts for Lifetime Fitness	
Marymount	Composition I, Composition II, Concepts of Lifetime Fitness, General Psychology	

Table 13, continued

Courses required of all students or of students in arts and sciences (or comparable unit)

Private not-for-profit institutions

	Courses required of all students	Courses required of all students in the arts and sciences
Randolph-Macon	Composition and Grammar, s/Composition and Grammar, Europe Renaissance to 1815, Europe Since 1815	
Randolph-Macon Woman's	Writing in College	
Roanoke	Writing I: Language and Thought, Writing II, Civilization I: Fine Arts or History or Literature, Civilization II: Fine Arts or History or Literature, Civilization III: Fine Arts or History or Literature, Values and the Responsible Life, Senior Symposium	
Saint Paul's	Survey of Art, Introduction to Computer Technology, Test Taking and Learning Skills, Freshman English, Freshman English II, Speech Fundamentals, Introduction to Literature, Introduction to Literature II, Physical Activities, Personal and Community Health, World History Since 1650, US History Since 1877, Orientation and Transition to College I, Orientation and Transition to College II, Introduction to Philosophy, General Psychology, Religions in American Life and Culture, Biological Science, Introduction to Sociology	Freshman Mathematics I, Freshman Mathematics II
Sweet Briar	Thought and Expression, Strategies for Wellness, Introduction to Expository Writing, Dimensions of Wellness	
University of Richmond	Exploring Human Experience, Exploring Human Experience II, Introduction to Expository Writing, Dimensions of Wellness	

Table 13, continued

Courses required of all students or of students in arts and sciences (or comparable unit)

Private for-profit institutions

	Courses required of all students	Courses required of all students in the arts and sciences
Bryant & Stratton (all campuses)	College English, Written Communication, Oral Communication, College Mathematics	
ECPI (all campuses)	College Composition, Critical Thinking, General Mathematics	
National Business	Economics, English II	
World College	Technical Writing I, Technical Writing II, Principles of Economics, General Psychology, Research Paper on World Cultures, Introduction to Management, Introduction to Sociology, Principles of Macro Economics, Business Communications, Marketing Principles	

After the writing requirements, the next most commonly reported course required of all students is an introductory course in public speaking, which the majority of community colleges reported that they required. Ten of the community colleges require all students in the arts and sciences to take a course in public speaking, and several also require specific mathematics or other courses.

At all institutions courses required of all students are those typically considered basic or foundational parts of the undergraduate curriculum. The subject area of courses required of all students is usually consistent with the mission of the institution setting the requirement. For example, five of the required courses at Virginia Military Institute relate to health or physical-fitness, while five of the required courses at Liberty University relate to theology or religion.

2.5 Course requirements by subject area

Far more common than required courses are course options in specified areas of the curriculum, from which students must choose. Part One of this study (see Tables 6 and 7) summarized the number of institutions that reported having general education requirements in each subject area, divided into content-oriented and skill-oriented requirements. Here, discussion will be focused on the specific number of credits required in each subject area, without division into content-oriented and skill-oriented requirements. The four tables that follow this page (Tables 14 through 17) give the number of required credits for each subject area by institutional type. Because some institutions checked that they required students to master content or attain skills in certain subject areas but did not list associated credit-hour requirements, the numbers presented in these tables will not always correspond to the numbers presented in Tables 6 and 7. That might be because some requirements are satisfied through teaching across the curriculum (without specific credits attached), through proficiency testing, or in some other way.

TABLE 14
Credits required by area, public four-year institutions

	Computer literacy/ Technology	Critical Thinking	Ethical Reasoning	Fine Arts	Foreign Languages	Health/P.E.	History	Humanities
Christopher Newport University	0	3	3	0	6-12	2	6	6
Clinch Valley College	0	0	0	3	6	1	0	3
College of William and Mary	0	0	3-4	6	4-16	2	12	17-23
George Mason University	0	0	0	3	12	0	0	0
James Madison University	0	3	0	3	0	3	0	3
Longwood College	0	0	1	4	3	3	3	0
Mary Washington College	0	0	0	3	12	2	0	0
Norfolk State University	0	0	0	3	0	3	3	6
Old Dominion University	3-6	3	3	3	6	0	6	12
Radford University	0	0	0	6	6	3	6	9
University of Virginia	0	0	0	0	14	0	3	0
Virginia Commonwealth Univ.	0-6	0-3	0-3	0	0-8	0	0	1.5-6
Virginia Military Institute	0	0	0	0	0	4	6	0
Virginia Polytechnic Institute & S.U.	0	0	0-6	1-3	0	0	0-6	0-6
Virginia State University	3	0	0	0	0	4	0	12

	International Studies	Library Research	Literature	Mathematics/ Quantitative analysis	Natural science	Oral Communications	Social Sciences	Writing	Required credits
Christopher Newport University	0	0	0	3	7	0	6	6	51
Clinch Valley College	0	0	3	6	8	0	9	6	52
College of William and Mary	0	4	3	4	8	4	8	7-8	41-70
George Mason University	0	0	6	3-4	8	3	12	9	33-66
James Madison University	0	0	3	3-4	7	3	9	3-6	40-43
Longwood College	3	0	3	3	4	3	3	6	33
Mary Washington College	0	0	3	6	8	0	6	3	49
Norfolk State University	0	0	6	3	7	0	3	3	40
Old Dominion University	0	0	3	3	12	3	6	6	42-54
Radford University	0	0	3	6	8	0	18	6	50
University of Virginia	0	0	0	0	0	0	6	6-7	44-50
Virginia Commonwealth University	0-3	0	0-3	0-11	0-23	0-3	0-18	6-12	31-63
Virginia Military Institute	0	0	0	6	8	1	0	12	49
Virginia Polytechnic Institute & S.U.	3	0	0	6	8	6	0-6	9	39-41
Virginia State University	0	0	0	6	8	0	12	6	48

Table continued on next page

TABLE 14, continued

Other requirements	
Clinch Valley College	6 credits in 'Western heritage'
College of William and Mary	4 credits in 'Study of non-Western culture; 2 hours in 'Artistic process.' All general education courses include critical thinking. The required 4-credit freshman seminar includes oral communication and library research.
George Mason University	0 to 6 credits in 'Non-Western Culture'; 0-6 credits in 'Philosophy/Religious Studies'; some categories overlap. Computer literacy/technology, critical thinking, and writing are taught across the curriculum
Longwood College	Parts of 33 required credits in 'Creative thinking', 'Understanding implications of knowledge', 'Understanding diverse perspectives', and 'Understanding inter-connections'
Mary Washington College	6 credits in "Western Civilization"
Old Dominion University	6 to 12 credits in upper-division requirements
University of Virginia	3 credits in 'Non-Western perspectives'; 12 hours in 'Math-Natural Sciences'; 6 hours in the 'Humanities, Fine Arts, and Literature.' The university teaches some concepts across the curriculum.
Virginia Commonwealth University	The College of Humanities and Sciences requires 8 - 9 credits in Humanities and 3 credits in its Urban category
Virginia Polytechnic Institute and S.U.	6 credits in 'Society and human behavior'

Table 15

Credits required by area, public two-year institutions

	Computer literacy/ Technology	Critical Thinking	Ethical Reasoning	Fine Arts	Foreign Languages	Health/P.E.	History	Humanities
Blue Ridge	0	0	0	0	0	2	6	0
Central Virginia	3	0	0	0	0	2	6	6
Dabney S. Lancaster	0	0	0	0	0	2	0	6
Danville	3	0	0	0	0	2	3-6	6
Eastern Shore	3	0	0	0	0	2-3	6	6
Germanna	3	0	0	0	0	2	6	6
J. Sargeant Reynolds	2-3	0	0	0	3-14	2	6	6
John Tyler	3	0	0	0	0	2	3	6
Lord Fairfax	3-4	0	0	0	0	2	0	6
Mountain Empire	3	0	0	0	8	2	6	6
New River	3	0	0	0	0	2	6	6
Northern Virginia	0	0	0	0	0-6	2	0-3	6
Patrick Henry	3	0	0	3	0	2	6	3
Paul D. Camp	3	0	0	0	0	2	6	6
Piedmont Virginia	3	0	0	0	0-6	2	0	6
Rappahannock	3	9	0	0	0	2	0	6
Southside Virginia	3	0	6	0	6-8	2	0	6
Southwest Virginia	0	0	0	0	0	2	0	6
Tidewater	0	0	0	0	0-6	2	6	6
Thomas Nelson	0	0	0	0	0-6	2	6	6
Virginia Highlands	3	3	0	3	0-14	2-3	6	3
Virginia Western	3	0	0	3	6	2	6	3
Wytheville	0	0	0	6	0	2	6	6
Richard Bland	3	20	3	3	0	4	6	6

Table continued on next page

TABLE 15, continued

	International Studies	Library Research	Literature	Mathematics/ Quantitative analysis	Natural science	Oral Communications	Social Sciences	Writing	Required credits
Blue Ridge	0	0	6	6	8	3	6	6	37-46
Central Virginia	0	0	0	6	8	3	12	6	37-46
Dabney S. Lancaster	0	0	0	3	8	3	12	6	37-46
Danville	0	0	0	3-6	8	0	12	6	37-46
Eastern Shore	0	0	6	3-14	8-16	3	12	6	37-46
Germanna	0	0	0	6	8	0	12	6	37-46
J. Sargeant Reynolds	0	0	0-6	3-14	8-24	3	6-12	6	37-46
John Tyler	0	1	3	6	8	0	12	6	37-46
Lord Fairfax	0	1	0	3	8	3	12	6	37-46
Mountain Empire	0	0	6	6	8	3	12	6	37-46
New River	0	0	3	6	8	3	12	6	37-46
Northern Virginia	0	0	0	6	8	3	9-12	6	37-46
Patrick Henry	0	0	0	6	8	3	6	6	37-46
Paul D. Camp	0	0	0	6	8	3	12	6	37-46
Piedmont Virginia	0	0	0	3	8	0	12	6	37-46
Rappahannock	0	4	0	3-6	8	3	12	6	37-46
Southside Virginia	0	0	6	6	8	0	12	6	37-46
Southwest Virginia	0	0	0	6	8	0	12	6	37-46
Tidewater	0	0	0	6	8	3	12	6	37-46
Thomas Nelson	0	0	0	6	8	0	12	6	37-46
Virginia Highlands	0	0	6	6	8	3	12	6	37-46
Virginia Western	0	0	6	3-9	8	3	6-12	6	37-46
Wytheville	0	0	6	6	8	3	12	6	37-46
Richard Bland	0	0	3	6	8	3	6	6	48

Note: Requirements shown are for transfer-oriented associate degrees. The Virginia Community College System requires
15 credits in general education courses for its occupational-technical degrees.

TABLE 16
Credits required by area, private not-for-profit institutions

	Computer literacy/ Technology	Critical Thinking	Ethical Reasoning	Fine Arts	Foreign Languages	Health/P.E.	History	Humanities
Averett	0	0	0	6	4-14	0	6	
Bridgewater	0	3	1-4	3	3-12	2	3	
College of Health Sciences	1-4	0	3	0	0	3-6	0	6-9
Eastern Mennonite	0	0	5	0	0	2	0	
Emory and Henry	1	0	3	0	0	0	0	
Hampden-Sydney	0	0	0	3	6	0	3	
Hollins	4	0	0	8	0	0	0	
Liberty	0	0	2	3	0	0	3	
Lynchburg	0	0	0	6	3-9	3	6	12-18
Mary Baldwin	3	0	0	9	0	2	0	
Marymount	0	0	3	0	0	2	3	
Randolph-Macon	3	0	6	3	3-12	2	6	
Randolph-Macon Woman's	0	0	0	3	3-6	1	3	
Saint Paul's	3	3	6	3	0	3	6	
Sweet Briar	3	3	0	3	6-12	2	0	
University of Richmond	0	6	0	3	6-12	2	3	
Virginia Intermont	3	0	3	3-6	0	2	6	
Washington and Lee	0	0	12	12	16	5	12	

Table continued on the next page

Table 16, continued

	International Studies	Library Research	Literature	Mathematics/ Quantitative analysis	Natural science	Oral Communications	Social Sciences	Writing	Required credits
Averett	0	0	6	3-6	4-8	0	9	3	39-58
Bridgewater	0	1	3	3	8	3	9	3	58-64
C of Health Sciences	0	0	3-6	3-9	8-40	0	3-18	6	32-60
Eastern Mennonite	9	0	0	3	4	2	3	3	49
Emory and Henry	3	0	4	3-4	4	1	3	3	39
Hampden-Sydney	0	0	3	4	10	0	9	0	52
Hollins	0	0	0	4	4	0	8	4	32
Liberty	0	0	3	3	4	3	6	8	55
Lynchburg	0	0	3-6	3-6	8-18	0	6	6	58-63
Mary Baldwin	6	0	0	3	9	3	9	9	68
Marymount	0	0	3	6	4	0	9	9	54
Randolph-Macon	0	0	6	6	8	6	6	6	50
Randolph-Macon Woman's	0	0	3	3	4	0	3	3	42
Saint Paul's	0	2	6	6	6	3	6	6	57
Sweet Briar	3	0	6	0	6	3	6	12	43-45
University of Richmond	0	0	3	3	8	3	3	3	46
Virginia Intermont	0	0	6	3-6	4-8	3	6	6	48-49
Washington and Lee	0	0	6	4-8	4-8	0	9	3	56

Other requirements	
Averett	6 credits in 'Religion/Philosophy'
Bridgewater	6 credits in 'World Cultures'; 2 hours in 'Wellness'
College of Health Sciences	1 to 4 credits in 'Interdisciplinary Studies'
Eastern Mennonite	6 credits in 'Christian Faith'
Emory and Henry	3 credits in 'Religion, and 6 credits in Western Traditions
Liberty	14 credits in 'Religion'; 3 hours in 'Philosophy'; 2 hours in 'Apologetics'
Lynchburg	2 credits in senior symposium
Mary Baldwin	3 credits in 'Women's Studies'
Randolph-Macon Women's	3 credits in Philosophy or Religion
Sweet Briar	3 credits in Non-Western Studies

TABLE 17

Credit requirements by area, private for-profit institutions

	Computer literacy/ Technology	Critical Thinking	Ethical Reasoning	Fine Arts	Foreign Languages	Health/P.E.	History	Humanities
Bryant & Stratton	4	4	0	0	0	0	0	0
Dominion College	0	8	0	0	0	0	0	0
ECPI - Va Beach & Hampton	0	3	0	0	0	0	0	3-5
ECPI - Richmond	0	3	0	0	0	0	0	3
ECPI - Roanoke	0	3	0	0	0	0	0	3-5
National Business College	0	0	0	0	0	0	0	0
World College	0	0	6	0	0	0	0	7

	International Studies	Library Research	Literature	Mathematics/ Quantitative analysis	Natural science	Oral Communications	Social Sciences	Writing	Required credits
Bryant & Stratton	0	4	0	4	0	0	0	4-8	32
Dominion	0	0	0	12	0	1	0	12	32
ECPI - Va Beach & Hampton	0	6	0	3	0	1	3	6	15-17
ECPI - Richmond	0	6	0	3	0	1	3	6	15
ECPI - Roanoke	0	6	0	3	0	1	3	6	15-17
National Business College	0	0	0	0	0	0	0	0	24
World College	0	0	0	12	0	0	21	13	31

Other requirements	
Bryant & Stratton	8 hours in 'Human Relations' and 'Career Management'

The following discussion is focused on the institutions' 1997-98 requirements in five specific subject areas (writing, mathematics/quantitative analysis, foreign languages, history, and computer literacy/technology), regardless of whether the institution describes its offering as content-oriented or skills-oriented. For instance, some institutions designate foreign-language courses as content-oriented courses, while others call them skills-oriented courses. Responses of both kinds are interwoven in the discussion that follows.

Writing

Because of its importance to all other areas of the college curriculum, writing is included in general education programs in a variety of ways. First, specific course offerings are designed to improve students' writing skills. These courses are typically called "Composition" and are often listed within the offerings of institutions' English departments. Students are usually required to earn a specified number of credits in these courses to graduate. Second, certain courses in other subject matter, such as history or literature courses, may be designated as "writing-intensive" courses, meaning that students are required to do a significant amount of writing in these courses and their work will be reviewed for the quality of both content and writing. Third, writing may be taught "across-the-curriculum," meaning that writing is integrated within a variety of courses throughout the general education curriculum.

All of the public institutions reported that students must earn credits in writing as part of their general education programs. Of the 15 public four-year institutions, ten require between six and nine credits. Three require less, with requirements that range between three and six credits (James Madison University, Mary Washington College, and Norfolk State University), and two require more, with requirements of 12 credits (Virginia Commonwealth University and Virginia Military Institute). The Virginia Community College System and Richard Bland College require that graduates of transfer-oriented programs have six credits of writing. Fifteen of the 18 private not-for-profit institutions require credits in writing, with eleven requiring between three and six credits, three requiring eight or nine credits, and one (Sweet Briar College) requiring 12. Averett College, the College of Health Sciences, and Hampden-Sydney College reported no required writing credits. Six of the private for-profit institutions require credits in writing, with four ranging between four and eight credits and two at 12-13 credits. National Business College was the only such institution that did not require credits in writing.

Institutions also reported on whether students are required to take writing-intensive courses and , if so, how many (including English composition, upper-division courses, and major courses). All of the institutions participating in the study except two (Liberty University and National Business College) reported that they require writing-intensive courses as part of their general education programs. Both the public and four-year institutions and the public two-year

institutions reported requiring between two and five such courses. All of the private not-for-profit institutions require between one and four writing-intensive courses, except Liberty University, which does not have this requirement. The six private for-profit institutions that have this requirement require from one to three writing-intensive courses.

Finally, writing is also included in general education programs as a theme taught "across-the-curriculum." Forty-five of the 54 institutions that teach themes across-the-curriculum as a curricular strategy reported that they teach writing in this way (see Table 8 above). Longwood College indicated that it integrates writing skills in as many as 33 credits, the total number of credits required in its general education curriculum.

Mathematics/quantitative analysis

Fourteen of the 15 public four-year institutions require students to earn a specified number of credits in mathematics/quantitative analysis. The requirements of all of these institutions range between three and six credits. The University of Virginia is the only public four-year institution without a specific credit requirement in mathematics; it places mathematics and science in a combined category, in which it requires students to earn 12 credits.

All of the public two-year institutions also reported that they require students to earn a specified number of credits in mathematics. The requirements of all of these institutions range between three and six credits, except that Virginia Western Community College reported requiring between three and nine, and Eastern Shore and J. Sargeant Reynolds Community Colleges reported requiring between three and fourteen credits of mathematics courses.

Among the private not-for-profit institutions, only Sweet Briar College reported that it does not require credits in mathematics. Fifteen require between three and six credits, while Eastern Mennonite University reported a range of between three and nine credits, and Washington and Lee University reported a range of between four and eight. Six of the seven private for-profit institutions require credits in mathematics. Four of these institutions require three or four credits, while both Dominion College and World College reported that they required 12. National Business College was the only private for-profit institution that does not require credits in mathematics.

Institutions were also asked to indicate the minimum level of mathematics required of all students. The choices given were calculus, statistics, college algebra, mathematics with no level or course specified and "other." Table 18 shows the number of institutions responding in each category.

	Public 4-year (N = 15)	Public 2-year (N = 24)	Private not-for-profit (N = 18)	Private for-profit (N = 7)	All institutions (N = 64)
Other	6	12	5	2	25
College algebra	5	7	7	(1)	19+(1)
Mathematics with no level or course specified	3	4	5	4	16
Calculus	1	10	0	1	2
Statistics	(1)	1	1	0	2+(1)

TABLE 18
Mathematics requirements

Only two institutions (Virginia Military Institute and World College) reported requiring calculus. Two institutions (Virginia Military Institute and Hampden-Sydney College) reported requiring statistics. (Virginia Military Institute reported three areas as its minimum requirement: calculus, statistics, and finite mathematics; it is the public four-year institution in Table 18 that responded calculus, with statistics indicated in parentheses as a supplemental response.)

College algebra was more common as a minimum requirement among the institutions, with five of the public four-year institutions, seven of the public two-year institutions, seven of the private not-for-profit institutions, and one private for-profit institution requiring it. (In Table 18, World College is the private for-profit institution that designated both calculus and college algebra as its minimum requirement; college algebra is indicated in parentheses as a supplemental response.)

A total of 40 institutions checked either mathematics with no level or course specified or "other." Nine of the 15 public four-year institutions specified courses such as mathematics and quantitative reasoning, math for critical thinking, finite math, functions and graphs, computer science, and statistical design making. Virginia Tech reported that it accepts "any course that relates to quantitative and symbolic reasoning." A majority of the public two-year institutions indicated that the minimum level of mathematics varied according to the type of transfer or occupational/technical program. Requirements of the private not-for-profit institutions were similar, while six of the private for-profit institutions specified such courses as college math and general business math.

Foreign languages

Foreign languages is a subject area in which it is difficult to predict how many courses an individual student must take, because institutions tend to require attainment of a certain level of proficiency, which depends upon the amount of foreign-language instruction the student has had prior to matriculation. This might be measured either in terms of years of study in high school or in terms of results on placement tests administered when the student arrives.

Ten of the 15 public four-year institutions reported that they required credits in a foreign language. Of these, one (Longwood College) required three credits, three required six credits, one required six to 12 credits, and two required 12 credits. The highest number of credits was reported by the University of Virginia at 14 and the College of William and Mary, which required 16 credits. Five institutions (James Madison University, Norfolk State University, Virginia Commonwealth University, Virginia Military Institute, and Virginia Tech) reported that they did not require credits in a foreign language. Virginia State University reported that it required a foreign language, but did not indicate any required number of credits.

Of the public two-year institutions, five of the 24 reported requiring credits in a foreign language for their transfer programs. Of these, Virginia Highlands Community College reported requiring 14 credits for students in its Liberal Arts program, and J. Sargeant Reynolds Community College reported requiring between three and 14 credits. The remaining three (Mountain Empire, Southside Virginia, and Virginia Western Community Colleges) reported requiring between six and eight credits. Four other community colleges (Northern Virginia, Piedmont Virginia, Tidewater, and Thomas Nelson) reported requiring from zero to six credits, depending on the degree sought. Some of these requirements differ from those set by the Virginia Community College System, which requires its Associate of Arts graduates to attain at least six credits in foreign-language courses at the intermediate level. To meet this requirement, students may need to take eight credits of beginning-level foreign-language credits before taking the intermediate-level courses.

Half of the 18 private not-for-profit institutions reported that they required credits in foreign languages. Of these nine, four required between three and 12 credits, and three required between six and 12 credits. Averett College requires between four and 14 credits, while Washington and Lee University (matching The College of William and Mary among the public four-year institutions) requires the most at 16 credits. The other half of these institutions (The College of Health Sciences, Eastern Mennonite University, Emory and Henry College, Hollins University, Liberty University, Mary Baldwin College, Saint Paul's College, and Virginia Intermont College) did not report requiring credits in a foreign language. None of the private for-profit institutions requires credits in a foreign language.

History

History as a discipline can be categorized in a variety of ways within a liberal arts curriculum. Some institutions include it in the humanities, some include it in the social sciences, and some treat it as a separate category or combine it with philosophy and religion. The discussion that follows relies on the institutions' responses to questions asked specifically about history requirements, while recognizing that some institutions allow students to select history courses to fulfill humanities or social sciences requirements, for example.

Eight of the 15 four-year public institutions reported that they require credits in history. Of these, four (Longwood College, Norfolk State University, Radford University, and the University of Virginia) required three credits, and three (Christopher Newport University, Old Dominion University, and Virginia Military Institute) required six credits. The College of William and Mary required the most history credits at 12. Four institutions (Clinch Valley College, George Mason University, Mary Washington College, and Virginia Commonwealth University) reported that they did not have a history requirement. The remaining three institutions (James Madison University, Virginia State University, and Virginia Tech) reported that they had a history requirement, but did not list any associated credits (presumably because history is included among the courses from which students may select their humanities or social-science requirements).

Sixteen of the 24 public two-year institutions reported that they require credits in history. Of these, one (John Tyler Community College) required three credits, one (Danville Community College) required three to six credits, and 14 required six credits. Five of the public two-year institutions (Dabney S. Lancaster, Lord Fairfax, Piedmont Virginia, Rappahannock, and Southwest Virginia Community Colleges) reported that they did not require credits in history. The remaining two institutions (Northern Virginia and Southside Virginia Community Colleges) reported that they required history, but did not list any associated credits because history is included among the courses from which students satisfy their social-science requirements. Southwest Virginia Community College reported that except for engineering, it required six credits in history for students in transfer-level programs.

Twelve of the 18 private not-for-profit institutions required credits in history. Of that number, six required three credits, and five required six credits. Washington and Lee University required the greatest number of credits, at 12. Six institutions (The College of Health Sciences, Eastern Mennonite University, Emory and Henry College, Hollins University, Mary Baldwin College, and Sweet Briar College) reported that they did not require credits in history. None of the private for-profit institutions required credits in history.

None of the institutions in this study indicated that their history requirement must be satisfied by a course or courses specifically in U.S. history.

In 1998, James Madison University approved a requirement that all of its students must take a course in American history in order to graduate. This new requirement, which will be in effect beginning fall 1999, was not in effect during the time-frame of this study.

Technology/computer literacy

Among the 15 public four-year institutions, only three (Norfolk State University, Old Dominion University, and Virginia State University) reported that they require students to earn credits through a separate course in technology. Longwood College reported that it integrated attainment of these skills throughout its 33-credit general education program. The remaining eleven institutions reported that they expected students to attain computer/technical literacy skills, although they did not require a specific course to do so. Seventeen of the 24 public two-year institutions reported that they require credits in computer/technical literacy. Of these 17, all required three credits, with the exception of J. Sargeant Reynolds Community College at two-to-three and Lord Fairfax Community College at three-to-four. The remaining seven institutions (Blue Ridge, Dabney S. Lancaster, Northern Virginia, Southwest Virginia, Tidewater, Thomas Nelson, and Wytheville Community Colleges) reported that they did not require students to earn credits in this subject area. Wytheville Community College provided students with a choice of taking credit courses or passing an examination to show their competency in this area.

Half of the 18 private not-for-profit institutions reported that they require students to earn credits in computer/technical literacy. Of the nine institutions, one (Emory and Henry College) required a single credit, and six required three credits. Institutions requiring the greatest number of credits were Hollins University at four and the College of Health Sciences at one-to-four. Only one private for-profit institution, Bryant and Stratton College required a four-credit course in computer/technical literacy.

2.6 Prerequisites and course sequencing

To assist students in moving through their studies in a way that ensures that they are adequately prepared for the course content, the college curriculum often uses two structural devices: a system of prerequisite courses that a student

must take before being admitted to a higher-level course and a system in which there is a planned, published sequence of courses. The difference between these two approaches is that there is more flexibility in the latter approach for students to substitute other ways of preparing for the higher-level coursework than simply by taking a specified prerequisite course.

The following three tables provide an overview of the extent to which there are hierarchical sequences of courses that students are expected to follow as part of the general education program. (A more detailed summary by institution may be found in Appendix IV.) A cautionary note is in order, however; it appears that institutions may have interpreted this section of the general education survey in different ways, so some of the comparability of data across institutions may have been compromised as a result. (N.B. The number of private institutions that participated in this part of the study differs from previous parts; a total of 16 private not-for-profit institutions (adding Hampton University and Roanoke College, but omitting Emory and Henry College, Mary Baldwin College, Virginia Intermont College, and Washington and Lee University) and six private for-profit institutions (omitting Dominion College) responded to this part.)

	0 to 25%	26 to 50%	51 to 75%	76 to 100%
Public 4-year (N = 15)	8	4	3	0
Public 2-year (N = 24)	11	11	2	0
Private not-for-profit (N = 16)	8	7	1	0
Private for-profit (N = 6)	6	0	0	0

TABLE 19
Percentage of general education courses that are a prerequisite

Table 19 shows that, at most of the institutions -- both public and private -- fewer than half of the general education courses are designated as prerequisites for other courses. Only six institutions reported that more than half of their general education courses are prerequisites for other courses: three public four-year institutions (Christopher Newport University at 58%, Mary Washington College at 52%, and Old Dominion University at 71%), two public two-year institutions (Piedmont Virginia Community College at 54% and Southside Virginia Community College at 52%), and one private not-for-profit institution (Saint Paul's College at 63%).

At approximately half of the public four-year, public two-year, and private not-for-profit institutions, only one-quarter or fewer of the general education courses are designated as a prerequisite for other courses. A few institutions

(Virginia Military Institute, Virginia State University, Eastern Mennonite University, Hampton University, and ECPI) responded that none of their general education courses were designated as prerequisites. Yet, in one of these instances, the institution also responded that 99% of the courses in its general education program are part of a planned sequence of study. It may be that institutions rely extensively on means other than a system of prerequisites (such as student advising) to establish a planned sequence of coursework and to ensure that students take courses in an appropriate sequence.

Among all 61 institutions participating in this part of the study, the average percentage of general education courses that are a prerequisite for other courses was 27%. The breakdown by institutional type is as follows: among public four-year institutions, 26%; among public two-year institutions, 26%; among private not-for-profit institutions, 29%; and among private for-profit institutions, 7%.

Table 20 summarizes the institutions' responses when asked how many of their general education courses require that students take a prerequisite course prior to enrolling in that course. It is similar to Table 19 in that it shows that, at most of the institutions – both public and private – fewer than half of the general education courses are designated as prerequisites for other courses.

	0 to 25%	26 to 50%	51 to 75%	76 to 100%
Public 4-year (N = 15)	8	4	3	0
Public 2-year (N = 24)	3	12	5	4
Private not-for-profit (N = 16)	6	7	3	0
Private for-profit (N = 6)	6	0	0	0

TABLE 20
Percentage of general education courses that have a prerequisite

Given the fact that many general education courses are designed to be taken by entering students, one would expect the percentage of courses that have a prerequisite to be lower than the percentage of courses that are a prerequisite to other courses. However, as Table 20 shows, the responses of the institutions seem to indicate that the opposite is true. This is because of the large volume of courses at a more advanced (*i.e.*, non-introductory) level that may satisfy a general education requirement.

A total of 15 institutions responded that more than half of their general education courses have prerequisites, while only six institutions reported that more than half of their general education courses are prerequisites for other

courses. Among the 15 were three public four-year institutions (Old Dominion University at 64%, Radford University at 67%, and Virginia Military Institute at 59%) and three private not-for-profit institutions (Hollins University at 61%, Randolph-Macon Woman's College at 59%, and Sweet Briar College at 59%). Since completing the survey, Radford University decreased the number of upper-division courses applicable to its general education program, and in doing so, estimated that it decreased to under 50% the number of general education courses that have a prerequisite. The remaining nine institutions were all community colleges, with the highest percentage of 100% reported by Southside Virginia Community College, which stated that 23 of its 23 general education courses have prerequisite courses. Three institutions (Eastern Mennonite University, Hampton University, and ECPI) reported that none of their general education courses have prerequisites.

Among all 61 institutions participating in this part of the study, the average percentage of general education courses that require a prerequisite course was 43%. The breakdown by institutional type is as follows: among public four-year institutions, 33%; among public two-year institutions, 52%; among private not-for-profit institutions, 43%; and among private for-profit institutions, 15%.

As noted above, in some cases – for a specific course – the responding institution indicated that the course neither had a prerequisite nor was a prerequisite for another course, yet the course was designated as part of planned sequence of study. Table 21 shows the overall percentages of courses within the general education programs that are part of a planned sequence.

	0 to 25%	26 to 50%	51 to 75%	76 to 100%
Public 4-year (N = 15)	7	4	2	2
Public 2-year (N = 24)	3	8	9	4
Private not-for-profit (N = 16)	8	5	1	2
Private for-profit (N = 6)	2	1	3	0

TABLE 21
Percentage of general education courses that are part of a planned sequence

Table 21 indicates that a higher proportion of the general education courses offered by the colleges and universities are part of a planned sequence of study than would be revealed by a review only of prerequisites. For example, among the 31 four-year institutions, none reported that 76 to 100% of their

general education courses were prerequisites nor did any report that high a percentage of courses as requiring prerequisites. When asked about planned sequences of study, however, four four-year institutions reported that 76 to 100% of their general education courses fit that designation (James Madison University at 96%, Virginia Military Institute at 99%, Hampden-Sydney College at 100% and Saint Paul's College at 100%). The public two-year colleges reported that a high proportion of their general education courses are part of a planned sequence, with all but three of these institutions reporting that from 26-100% of their general education courses are so designated.

Among all 61 institutions participating in this part of the study, the average percentage of general education courses that are part of a planned sequence of courses was 37%. The breakdown by institutional type is as follows: among public four-year institutions, 30%; among public two-year institutions, 50%; among private not-for-profit institutions, 30%; and among private for-profit institutions, 28%.

2.7 Placing out of general education courses

A great majority of the institutions allow students to "place out" of certain general education courses, i.e., to be excused from taking certain courses because of prior study or attainment on placement examinations. Of the 61 institutions that participated in this part of the study, only three reported that they have no courses from which students may place out. Those three included one public two-year institution (Rappahannock Community College), one private not-for-profit institution (Eastern Mennonite University), and one private for-profit institution (World College).

Table 22 gives the number of institutions of each type that allow students to place out of the designated percentage of general education courses.

	0 to 25%	26 to 50%	51 to 75%	76 to 100%
Public 4-year (N = 15)	11	3	0	1
Public 2-year (N = 24)	7	12	3	2
Private not-for-profit (N = 16)	10	4	2	0
Private for-profit (N = 6)	3	0	0	3

TABLE 22
Percentage of general education courses from which students may place out

At most of the public four-year institutions (11 of 15) and most of the private not-for-profit institutions (10 of 16), students have the option of placing out of only one-quarter or fewer of the general education courses. Of the remaining four public four-year institutions, three (Christopher Newport University at 27%, Norfolk State University at 30%, and Virginia Military Institute at 26%) allow students to place out of slightly more than a quarter of these courses. Old Dominion University allows a placing-out option for 100% of its general education courses – a percentage that is substantially higher than the percentage at any other four-year institution; Old Dominion University reported, however, that only a "modest" number of students placed out of general education courses. Among the private not-for-profit institutions, only two (Liberty University at 69% and Saint Paul's College at 67%) allow students to place out of more than half of the general education courses.

Placing out is a more widely available option in the public two-year institutions. Twelve of the community colleges allow students to place out from 26% to 50% of their general education courses. Three (John Tyler at 52%, Piedmont Virginia at 54%, and Thomas Nelson at 53%) allow a placing-out option for slightly more than half of these courses, and two (Dabney S. Lancaster and Southside Virginia) allow students to place out of 100% of their general education courses.

The private for-profit institutions that responded to the survey are split between a high and a low percentage of courses from which students may be exempt. This split is based on a common set of responses from the three campuses of ECPI, which allows students to place out of all seven general education courses (100%), versus the three other private for-profit institutions with much lower percentages (Bryant & Stratton College at 15%, National Business College at 13%, and World College at 0%).

Institutions offer several different means of assessing a student's eligibility to place out of certain general education courses. The most common method is a standardized test, such as the achievement parts of the Scholastic Aptitude Test, the Advanced Placement Tests, and the College-Level Examination Program. Table 23 provides an overview of the number of institutions that use these various options; note that a single institution might offer multiple or no options.

	SAT	AP	CLEP	Other
Public 4-year (N = 15)	4	12	7	7
Public 2-year (N = 24)	1	21	16	2
Private not-for-profit (N = 16)	4	11	8	7
Private for-profit N = 6)	0	0	0	3

TABLE 23
Basis for testing out of general education courses

The most prevalent mechanism reported in the survey was Advanced Placement (AP) coursework, with an established minimum grade point on the AP examination for a given subject area. Nearly every institution reported this option, with the exception of the private for-profit institutions, as shown in Table 23. Most institutions require students to achieve a grade point of three, four, or five, depending on the specific course.

The next most common mechanism through which students may test out from general education coursework is the College Level Examination Placement (CLEP). The (CLEP) is a program of examinations in undergraduate college courses that provides students and adults the opportunity to demonstrate college-level achievement. CLEP is designed to allow people who have gained knowledge outside the classroom to take examinations and receive college credit for what they have learned. CLEP is cited as an option at two-thirds of the public two-year colleges (16 of 24), at half of the responding private not-for profit institutions (8 of 16), and at six of the 15 public four-year institutions. None of the responding private for-profit institutions reported this option.

Students may test out of a small number of courses at a relatively small number of institutions based on their scores on the achievement parts of the Scholastic Aptitude Test (SAT). Four public four-year and four private not-for-profit institutions reported this option, along with one community college (John Tyler Community College). Most of the institutions that allow students to test out of courses on the basis of their SAT scores permit this option for composition courses. Several institutions allow students to test out of foreign language courses based on SAT scores.

Some institutions responded that they allow students to place out of courses on the basis of other mechanisms. These other mechanisms usually consist of departmental or institutional essays or exams, portfolios of students' work, or other locally developed means to assess students' proficiency in the

relevant area. One institution (Liberty University) reported using the ICE examination as the means for students to place out, and one institution (the University of Richmond) allowed students to test out of a writing course on the basis of their score on the American College Testing examination. Old Dominion University reported that it uses the International Baccalaureate (IB) and the Defense Activity for Non-Traditional Education Support (DANTES) examinations.

Institutions were also asked to indicate the percentage of students who place out of a given course, on average, each year. A few institutions responded that they did not have these data or simply left that portion of the survey blank. Overall, however, the responses indicate that very few students actually place out of general education courses – typically less than 2%.

There are a few institutions in which the range of the percentages of students who place out of different courses is wide. Examples among the public four-year institutions include the College of William and Mary (1-31%), James Madison University (0-70%), the University of Virginia (less than 2% to 22%), Virginia Commonwealth University (0-30%), and Virginia Tech (0-33%). While there are a few courses at these institutions from which 22% to 70% of the students place out each year, it is far more typical for less than 3% of the students to test out of any given course. Nearly all of the public two-year institutions reported that less than 1% of students tested out from most of the courses where this option was available. One community college (Eastern Shore) varied from that pattern, reporting that anywhere from 0 to 10% of students placed out of the eligible courses each year; however, the typical percentage was under 5%.

Several of the private not-for-profit institutions reported wide ranges of percentages in response to this question: 1-20% at Bridgewater College, 0-73% at Hollins University, 1-35% at Roanoke College, and 0-34% at the University of Richmond. Again, while there were a few classes at these institutions from which 20% to 73% of the students placed out, it was far more typical for no more than 1% of students to place out of a class in a given year. Likewise at the private for-profit institutions, only about 1% of students actually placed out of the courses for which this is an option.

2.8 Consistency across sections of the same course

As part of their responses to the survey, institutions addressed the ways in which they achieved consistency across different sections of the same general education course. All of the public institutions indicated that they endeavored to maintain consistency through a variety of methods. The majority of the public institutions reported using common syllabi, texts, content, course objectives, examinations, assessment methods, sequencing of courses, orientation of and staff development for full-time and adjunct faculty, and evaluation of instructors.

One typical response was that from Virginia State University, which reported that "the design of the general education curricula requires the use of common syllabi, examinations, texts, and assessment methods." Another was from Blue Ridge Community College, which said that the college's "institutional assessment plan evaluates general education achievement of graduates. It also focuses on the demonstration of equivalency of general education courses taught on- and off-campus, including dual enrollment sections." Several public institutions, both four-year and two year, pointed to their assessment programs as influencing the institution's efforts to maintain consistency across sections of the same general education course.

Among the private not-for-profit institutions, Averett College, Eastern Mennonite University, Randolph-Macon College, Randolph-Macon Woman's College, and Sweet Briar College reported that they did not attempt to assure consistency across different sections of the same general education course. These five institutions were in a minority, for the other 13 private not-for-profit institutions reported that they act to assure consistency. For example, Washington and Lee University reported that "all courses which satisfy GE requirements must be approved by at least one department in that division and further approved by the Courses and Degrees committee, which reviews each proposed new course individually for both content and rigor." Other responses were more specific, such as that of Saint Paul's College: "All sections of the same course are taught with the same syllabus and textbook regardless of instructor. In addition, students take the same exam to assure content and skill-development consistency."

Part Three: Actual course-taking patterns for 1993-97

Crucial to the analysis of general education programs is an examination of the courses students actually take. While Part Two of this study dealt with possible choices, Part Three will deal with actual choices. For the purposes of this part, a cohort of first-time freshman students was identified: those who entered in fall 1993, who had completed at least 90 credits (45 credits at two-year institutions) at the institution they entered, and who were enrolled through 1996-97. Using a cohort whose members had completed this much of their coursework eliminated students who had dropped out of school early, who had transferred to another institution, or who were taking so few courses each semester that they had not yet completed about three-fourths of their degree requirements.

Most institutions expect that their students will take general education courses in their first two years, so most of the students in this cohort should have substantially completed their general education program. While at some institutions (particularly those in urban areas, such as Christopher Newport University, George Mason University, Norfolk State University, Old Dominion University, and Virginia Commonwealth University) this cohort is but a small percentage of the total student body, it represents how students experience the curriculum. At institutions that are highly residential and that are generally attended by full-time students, such as the College of William and Mary and the University of Virginia, the cohort represents most of the students who entered in fall 1993.

The data reported in this section come from two sources. First, each institution reported which of its courses applied toward meeting general education requirements for students who entered in fall 1993. This list then was matched with the Council's course enrollment files to track the cohort of students who actually took those courses. While the Council's data system clearly identifies which students have taken a course, it cannot tell whether or not the student took the course to meet a general education requirement. Students may have taken specific courses because they were advised to do so, because the courses were required in the major, because they were on a popular topic or offered by a popular faculty member, or simply because the student chose them.

The general education curriculum experienced by this cohort of students may not be the curriculum that the institution defines today. This is particularly true for several institutions that have made major changes in their general education programs since fall 1993. Among these institutions are the College of William and Mary, James Madison University, Mary Washington College, Old Dominion University, and Virginia Commonwealth University. Descriptions of how those institutions have changed their programs are in Part Five of this study, concerning the process of change in general education programs.

3.0 Number of courses from which students may select

A question often asked about general education is the number of courses from which students may select to meet their general education requirements. Although varying widely from institution to institution, at most institutions students may select from a large number of courses, particularly within the humanities, social sciences, arts, and foreign languages. Appendix V presents an institution-by-institution summary of the number of courses available in each of the institutionally defined categories for their general education programs. Some institutions use easily recognizable categories, *e.g.,* mathematics, social sciences, and literature, while others use categories that have institutional, if not universally recognized, meanings, *e.g.,* "Cluster 2" (at James Madison University) or "the village" (at Eastern Mennonite University).

At the University of Virginia, the number of courses from which students may select to satisfy their general education requirements is in excess of 1,300. (N.B. The listing for the University of Virginia in Appendix V is limited to the number of courses from which students commonly choose. The numbers listed for all other institutions are the actual numbers of courses that are possible choices.) There were a few listings of more than 100 courses: the humanities at Northern Virginia Community College (at 231), area II-A (literature and the arts) at Sweet Briar College (at 206), social and behavioral sciences at Radford University (at 168), visual and performing arts at Virginia Commonwealth University (at 136), the humanities at Randolph-Macon College (at 131), area 2 (the humanities) at Virginia Tech (at 116), and area V-A (the social sciences) at Sweet Briar College (at 113). In most institutions, the number of humanities courses from which students can select was larger than the number of courses for most other categories, possibly because the humanities, in general, do not have a common methodological basis as do most other categories. Most institutions listed fewer than 20 courses in each category.

Given this type of structure, one might expect students' choices to be widely distributed throughout the range of courses available in each category. However, the experience of Virginia's students indicates otherwise. Data presented in this part of the study will show that a relatively small number of courses have large percentages of students enrolled in them.

3.1 Courses that students actually take

Another important question related to the choice of courses is, what are the most common courses actually chosen by students? In Appendix VI are lists of the 50 most commonly enrolled general education courses (including course numbers and course titles) taken by students at each of the participating institutions and the percentage of students in the cohort who took each course. (N.B. One cautionary note is in order concerning this appendix: it does not reflect the percentage of students who earned college credit through means other than

college coursework, *e.g.*, through advanced placement credit. Therefore students may have earned more credits than are evident in this appendix.)

Although one might expect that all students would take a required course, very few courses are actually taken by 100% of students in any cohort, either because students have advanced-placement credit or because they are exempt from specific courses for other reasons. In just two cases, the same course was taken by 100% of the cohort: at Bridgewater College the course was College Seminar, while at Virginia Military Institute it was Computing. At James Madison University, more than 99% of the cohort took The Freshman Seminar.

In some cases, between 90% and 99% of the cohort of students took a specific course. Following are lists of those courses, which number 22 at the public institutions and 32 at the private not-for-profit institutions:

PUBLIC FOUR-YEAR INSTITUTIONS

James Madison University	Reading and Composition II
Longwood College	Total Fitness Through Exercise Composition and Literary Analysis
Norfolk State University	Communication Skills I and II
Radford University	Introductory Psychology Reading, Writing, and Research Skills Introduction to Expository Writing
Richard Bland College	Writing and Research Introduction to Literary Genres
Virginia Commonwealth University	Composition and Rhetoric I and II
Virginia Military Institute	Speech Boxing Drug and Alcohol Abuse Awareness Principles of Physical Conditioning English Composition I and II
Virginia State University	Reading and Writing About Literature I Personal Health Freshman Writing

TABLE 24
General education courses taken by 90% or more of the cohort

PUBLIC TWO-YEAR INSTITUTIONS

Virginia Community College System	College Composition

PRIVATE NOT-FOR-PROFIT INSTITUTIONS

Averett College	History of Western Civilization
Bridgewater College	Composition and Literary Forms
Hampden-Sydney College	Principles and Practice of Writing I and II
Hampton University	The Individual and Life Humanities I and II World Civilization II English Health Education
Liberty University	Contemporary Issues I and II Evangelism and Christian Life Theology Survey I and II Philosophy and Contemporary Ideas Composition and Literature Old Testament Survey
Lynchburg College	History of Civilization I and II Freshman English
Marymount University	General Psychology Composition I
Randolph-Macon College	Europe: Renaissance to 1815 Europe Since 1815
Randolph-Macon Woman's College	Colloquium
Roanoke College	Values and the Responsible Life Writing Course II
Saint Paul's College	World History since 1650 United States History to 1877 Introduction to Philosophy
Sweet Briar College	Strategies for Wellness

TABLE 24, continued
General education courses taken by 90% or more of the cohort

A logical question to ask is whether commonly enrolled courses such as these constitute a "*de facto* general education program." To assess whether these courses constitute a *de facto* program, the following definitions were used in this part of the study: courses taken by more than 70% of the cohort have "high commonality," courses taken by 50% to 69% of students have "medium commonality," and courses taken by 30% to 49% of students have "low commonality." Courses taken by fewer than 30% of students have such very low commonality that they are not considered part of any *de facto* program. Table 25 on the next page shows the average number of credit hours taken in high-commonality, medium-commonality, and low-commonality courses by the cohort at each public and private not-for-profit institution.

A guide to reading this table may be helpful for readers. As an example, at Christopher Newport University, more than 70% of students took 12 credits in common. At Christopher Newport, the courses were College Writing I, College Writing II, Elementary Statistics, and General Biology (3 credits for each course). Between 50% and 69% of the cohort enrolled in 27 additional credits and between 30% and 49% of the cohort was enrolled in 38 more credits. Overall, a subset of at least 30% of the Christopher Newport University cohort took 77 credits in courses of high, medium, or low commonality. (A list of the courses comprising these credits and the courses for all other institutions is found in Appendix VII.) It is useful to note that the 77 credits exceeds the credits required in Christopher Newport University's general education program; this is because that university's students have many choices as to which courses they take within the general education program. Within those choices, however, students actually take many courses in common and have, then, common learning experiences that form a basis for their intellectual progress.

	Number of credits taken in "high-commonality" courses (70-100% of cohort)	Number of credits taken in " medium-commonality" courses (50-69% of cohort)	Number of credits taken in "low-commonality" courses (30-49% of cohort)	Number of credits taken in courses with high, medium, and low-commonality (30-100% of cohort)
PUBLIC 4-YEAR AND 2-YEAR				
Christopher Newport University	12	27	38	77
Clinch Valley College	21	19	27	67
College of William and Mary	0	9	20	29
George Mason University	9	13	13	35
James Madison University	6	12	33	51
Longwood College	8	16	30	54
Mary Washington College	6	10	39	55
Norfolk State University	18	24	12	54
Old Dominion University	6	15	12	33
Radford University	12	20	36	68
University of Virginia	0	6	7	13
Virginia Commonwealth University	6	6	15	27
Virginia Military Institute	11	16	30.5	57.5
Virginia Polytechnic Institute & S. U.	3	10	22	35
Virginia State University	15	18	25	58
Richard Bland College	23	11	8	42
Virginia Community College System	6	9	17	32
PRIVATE NOT-FOR-PROFIT				
Averett College	18	12	37	67
Bridgewater College	10	21	32	63
Eastern Mennonite University	0	9	25	34
Hampden-Sydney College	18	20	25	63
Hampton University	21	9	15	45
Hollins University	0	8	12	20
Liberty University	28	6	19	53
Lynchburg College	25	6	24	55
Marymount University	16	9	28	53
Randolph-Macon College	12	10	45	67
Roanoke College	28	12	36	76
Randolph-Macon Woman's College	3	6	24	33
Saint Paul's College	19	6	3	28
University of Richmond	2	3	22	27
Sweet Briar College	4	6	12	22

TABLE 25

Number of credits taken in high-commonality, and medium-commonality, and low-commonality courses at public and private not-for-profit institutions

The College of Health Sciences had a reporting anomaly in which the one first-time freshman who enrolled that year was the entire cohort and each course that that student took created a 100% cohort rate for the class. Because of the anomaly, that institution was not included in further calculations for private not-for-profit institutions. Four other private not-for-profit institutions (Emory and Henry College, Mary Baldwin College, Virginia Intermont College, and Washington and Lee University) provided survey data but did not provide lists of their general education courses, so analysis could not be done of what general education courses had been taken by students in the cohort at those two institutions. For the remainder of the discussions of what students actually took from 1993-1997, the report focuses on the 15 private not-for-profit institutions that submitted usable data for that period.

Among public institutions, Richard Bland College (at 23) had the highest number of credit hours taken by the cohort in courses with high commonality, followed by Clinch Valley College (at 21) and Norfolk State University (at 18). Among the private not-for-profit institutions, Liberty University and Roanoke College tied for the highest number of credit hours in high-commonality courses (at 28), followed by Lynchburg College (at 25) and Hampton University (at 21). Only four institutions (the College of William and Mary, the University of Virginia, Eastern Mennonite University, and Hollins University) had no credit hours in courses taken by 70% or more of the cohort.

The results are somewhat different when one looks at the number of credit hours taken in all "commonality" courses (*i.e.*, all courses that 30% or more of the cohort took). Among the public institutions, Christopher Newport University had the highest number (at 77), followed by Radford University (at 68) and Clinch Valley College (at 67). The University of Virginia was by far the lowest (at 13), with Virginia Commonwealth University second lowest (at 27) and the College of William and Mary next (at 29). Among the private not-for-profit institutions, Roanoke College was the highest (at 76), followed by Averett College and Randolph-Macon College (both at 67). Hollins University was the lowest (at 20), with Sweet Briar College second lowest (at 22). At the majority of institutions, the number of general education credits taken by 30% or more of the cohort exceeded the number of credits the institution required in general education, showing that the program experienced by the students exceeds the minimum general education requirements set by the institution.

At six of the 15 public four-year institutions (Christopher Newport University, Clinch Valley College, Norfolk State University, Radford University, Virginia Military Institute, and Virginia State University) more than 50% of the cohort took at least ten courses (at least 30 credits) in common. The same occurred at seven of the 15 private not-for-profit institutions (Averett College, Bridgewater College, Hampden-Sydney College, Hampton University, Liberty University, Lynchburg College, and Roanoke College). But at the majority of institutions, public and private, more than half of the 50 most commonly enrolled courses

were taken by fewer than 30% of the cohort. Detailed lists of the percentage of students who took each of the 50 most commonly enrolled courses are provided in Appendix VI.

Appendix VII lists for each institution the courses taken by the cohort in each of the general education categories defined by that institution, as well as the percentage of the cohort who took each course. As was discussed above, in some categories, particularly composition and mathematics, the number of courses from which students may select is limited. In other categories, particularly in the humanities and social sciences, students at most institutions have a wider variety of courses from which to select. However, a review of enrollment patterns shows that students are very likely to enroll in a few courses and very unlikely to enroll in courses that are highly specialized or tangential to a strong general education program.

3.2 Course taking patterns in selected areas

Given the state and national attention devoted to specific academic areas, this section of the study will discuss course-taking patterns in seven academic areas at the participating institutions: writing, mathematics, foreign languages, history, the natural and physical sciences, the social sciences, and the humanities. Continuing reference may be made to Appendix VII for an institution-by-institution summary of the courses that met general education requirements in institutionally defined categories that most closely match each of these areas and the percentage of students who took each course.

Writing

At the public institutions, writing courses are among the most commonly enrolled courses, with 85% or more of the cohort taking at least one writing course in common at 11 of the 15 public four-year institutions. At another two of these institutions (Virginia Tech at 81% and Clinch Valley College at 78%) the most commonly enrolled writing course was a high-commonality course (70% or more of the cohort had taken the course). The remaining two institutions were the University of Virginia (at 54%) and the College of William and Mary (at 19%). At six of these institutions (Christopher Newport University, Longwood College, Norfolk State University, Radford University, Virginia Military Institute, and Virginia State University), more than 85% of the students took two writing courses in common. For students in the cohort at Clinch Valley College, George Mason University, and Virginia Commonwealth University, the second most commonly enrolled course was also a high-commonality course. Within the Virginia Community College System, the most commonly enrolled writing courses were College Composition I and II at 90% and 81% respectively, while at Richard Bland College 98% of the cohort took Writing and Research.

Similar patterns exist at the private not-for-profit institutions, at almost all of which students took at least one high-commonality writing course. The two exceptions were Hollins University, at which the most commonly enrolled course was taken by 52% of the cohort, and Eastern Mennonite University, at which it was taken by 39% of the cohort. At nine of the 15 private not-for-profit institutions (Bridgewater College, Hampden-Sydney College, Hampton University, Liberty University, Lynchburg College, Marymount University, Randolph-Macon Woman's College, Roanoke College, and Sweet Briar College), at least 85% of the cohort of students took at least one writing course in common. The only private for-profit institution that submitted usable data was Bryant and Stratton College, and its College English was a high-commonality course at all three of its locations.

Table 26 beginning on the next page shows the four writing courses most commonly taken by students in the cohort at each institution. An institution-by-institution listing of all writing courses that met general education requirements in 1993-1997 and the percentage of the cohort that enrolled in each course may be found in Appendix VII.

TABLE 26

The four writing courses meeting general education requirements that were most commonly taken by the cohort of students at each institution and the percent of students who took each course (Writing courses were categorized in several ways, including English, writing, and communications courses.)

	Course	%	Course	%	Course	%	Course	%
Christopher Newport U.	College Writing I	88	College Writing II	86	Argumentative & Interpretive Writing	13	Persuasive Writing - Honors	12
Clinch Valley C.	Composition	78	Composition	75	Composition	18		
C. of William and Mary	Writing	19						
George Mason U.	Advanced Composition	85	Composition	81	Comp. Nonnative Speakers	2		
James Madison U.	Reading and Composition II	95	Reading and Composition I	51				
Longwood College	Composition and Literacy Analysis	91	Rhetoric and Research	89				
Mary Washington C.	Writing Workshop	89						
Norfolk State U.	Communications Skills II	97	Communications Skills I	96	Advanced Communication. Skills	68	Professional and Technical Writing	4
Old Dominion U.	English Composition	86						
Radford U.	Reading, Writing, and Research Skills	96	Intro to Expository Writing	93				
U. Of Virginia	Composition	54						

TABLE 26, continued

	Course	%	Course	%	Course	%	Course	%
Virginia Commonwealth	Composition and Rhetoric	91	Composition and Rhetoric	79				
Virginia Military Institute	English Composition II	96	English Composition I	92				
Virginia Polytechnic Inst. and State U.	Freshman English II	81	Freshman English I	59	Honors Freshman English	10		
Virginia State U.	Reading and Writing About Literature I	99	Freshman Writing	97	Reading and Writing About Literature II	43		
Virginia Community College System	College Comp I	90	College Comp II	81				
Richard Bland College	Writing and Research	98						
Averett	Intro to Writing and Research	74						
Bridgewater	Composition and Literary Forms	93	English Composition	58				
Eastern Mennonite	College Writing	39	Advanced Writing	29				
Hampden-Sydney	Principles and Practices of Writing I	95	Principles and Practices of Writing II	95	Advanced Composition and Writing	1		

TABLE 26, continued

	Course	%	Course	%	Course	%	Course	%
Hampton	English	96	English	74				
Hollins	Fundamental Writing - Poetry/Fiction	52	Expository Writing	23	Intermediate Creative Writing	14	Advanced Creative Writing	11
Liberty	Composition and Literature	92	Grammar and Composition	77	American Literature II	31	American Literature I	21
Lynchburg	Freshman English	91	Freshman English II	90				
Marymount	Composition I	90	Composition II	88	Report Writing	42	The Writing Process	14
Randolph-Macon	Composition and Grammar	80	Composition and Grammar	62				
Randolph-Macon Woman's	Colloquium	99	Writing in College	0				
Roanoke	Writing Course II	91	Writing Course I	71				
Saint Paul's	Freshman English II	74	Freshman English I	66				
Sweet Briar	Thought and Expression	89						
U of Richmond	Intro to Expository Writing	70						

TABLE 26, continued

	Course	%	Course	%	Course	%	Course	%
Bryant & Stratton Hampton	College English	77	Written Communication I	64				
Bryant & Stratton Richmond	College English	95	Written Communication I	90	Written Communication II	3		
Bryant & Stratton VA Beach	College English	83	Written Communication I	56				

Mathematics

Students in the cohort took fewer mathematics courses in common than writing courses. Among the public four-year institutions, only at Christopher Newport University did more than 85% of the cohort take the same course - Elementary Statistics. Clinch Valley College's Pre-Calculus and Norfolk State University's Mathematics in General Education were both high-commonality courses (at 73%), as was Richard Bland College's College Algebra (at 79%). At all four, the second most commonly enrolled mathematics course was a medium-commonality course (taken by 50% to 69% of the cohort). At five of the public four-year institutions (Longwood College, Mary Washington College, Old Dominion University, Virginia Military Institute, and Virginia State University), the most commonly enrolled mathematics course was a medium-commonality course. (Virginia Military Institute students took two medium-commonality mathematics courses.) No mathematics course was taken by 30% or more of the cohort at two public four-year institutions (George Mason University at 28% and the University of Virginia at 26%). Within the Virginia Community College System, the most commonly enrolled mathematics courses were Mathematics for the Liberal Arts I and II, with 23% and 17% respectively.

At the private not-for-profit institutions, the only mathematics course that met the definition for high commonality was Introductory Statistics at Roanoke College (at 74%). At five of these institutions (Averett College, Bridgewater College, Hampden-Sydney College, Marymount University, and Randolph-Macon College), the most commonly enrolled mathematics course was a medium-commonality course. No mathematics course was taken by 30% or more of the cohort at three institutions (Eastern Mennonite University at 15%, Hollins University at 20%, and Saint Paul's College at 29%).

Table 27 shows the four mathematics courses most commonly taken by students in the cohort at each institution. An institution-by-institution listing of all mathematics courses that met general education requirements in 1993-1997 and the percentage of students who took each course may be found in Appendix VII.

TABLE 27

The four mathematics courses meeting general education requirements that were most commonly taken by the cohort of students at each institution and the percent of students who took each course. (In some institutions, the classification is for abstract thought rather than mathematics.)

	Course	%	Course	%	Course	%	Course	%
Christopher Newport	Elementary Statistics	87	Contemporary Math	51	College Algebra	31	Elementary Functions and Analytical Geometry	26
Clinch Valley	Pre-Calculus	73	Algebra & Trig	67	Calculus I	39	Elementary Probability and Statistics	17
C. of William and Mary	Calculus I	37	Calculus II	33	Multivariate Calculus	19	Linear Algebra	17
George Mason	Intro. to Calculus: Business App	28	Intro to Computing	22	Analytic Geometry and Calculus I	22	Concepts of Math	21
James Madison	Intro. Calculus I	45	Elem. Statistics	31	Nature of Math	17	Analytic Geometry and Calculus	14
Longwood	Statistical Decision Making	51	Functions and Graphs	45	Intro. to Programming	9		
Mary Washington	Finite Math	56	Intro. to Statistics	35	Calculus I	34	Intro. to Computer Science	30
Norfolk State	Math in General Education	73	Contemporary Math	66	College Algebra	20	College Math & Trig.	20

TABLE 27, continued

	Course	%	Course	%	Course	%	Course	%
Old Dominion	College Algebra	51	Pre-Calculus I	33	Elementary Statistics	29	Differential Equations	2
Radford	Intro. to Computers	61	College Algebra	50	Finite Math	37	Business Statistics	25
U of Virginia	Intro. Calculus I	26	Intro. Statistics	22	Calculus II	14	Probability/Finite Math	14
Virginia Commonwealth	Math did not fall within a general education category.							
Virginia Military	Calculus I	67	Finite Math	67	Calculus II	50		
Virginia Polytechnic Inst.	Elem. Calculus with Trig. II	35	Calculus II	32	Elem. Calculus with Trig I	28	Calculus I	26
Virginia State	College Algebra and Trig	51	Basic Math I	50	Basic Math II	49		
Virginia Community College System	Math for Liberal Arts I	23	Math for Liberal Arts II	17	Calculus with Analytic Geometry I	11	Precalculus I	11
Richard Bland	College Algebra	79	Intro. Statistics	67	Trigonometry	30	Calculus for Business and Social Science	25
Averett	Principles of Mathematics	58	Intro. to Statistics	48	Precalculus Math	41	Calculus	27

TABLE 27, continued								
	Course	**%**	**Course**	**%**	**Course**	**%**	**Course**	**%**
Bridgewater	Intro. to Statistics	51	Precalculus Math	36	Algebra & Problem Solving	33	College Algebra	27
Eastern Mennonite	College Algebra	15	Math & the Liberal Arts	10				
Hampden-Sydney	Statistics	63	Calculus I	44	Calculus II	28	Finite Math Models	22
Hampton	College Mathematics I	41	College Mathematics II	37				
Hollins	Mathematical Ideas	20	Research Design and Statistical Math	19	Basic Precalculus Math	16	Basic Precalculus Math II	14
Liberty	College Algebra	34	Intermediate Algebra	31	Intro. to Probability and Statistics	18	Foundations of Math	16
Lynchburg	Math for Liberal Arts I	47	Math for Liberal Arts II	47	Calculus	33	College Algebra	22
Marymount	College Algebra	68	Intro. to College Math	29	Elementary Functions	28	Statistical Analysis	28
Randolph-Macon	Intro. Statistics I	83	Intro. Finite Math	62	Intro. to Calculus	29	Calculus I	17
Randolph-Macon Woman's	College Algebra	30	Precalculus Math	5	Finite Math	<1		

TABLE 27, continued

	Course	%	Course	%	Course	%	Course	%
Roanoke	Intro. Statistics	74	Methods Math Modeling	42	Methods Probabilistic Modeling	28	Intro. Calculus I	19
Saint Paul's	Freshman Mathematics	29	Freshman Mathematics	17	Freshman Mathematics	17	Freshman Mathematics	6
Sweet Briar	Statistics of Inference	38	Calculus II	28	Calculus I	27	Intro. Elem. and Transcendental Functions	18
Univ. of Richmond	Calculus I	33	Calculus with Algebra and Trig.	23	Calculus II	18	Elem. Symbolic Logic	12

Foreign languages

Some institutions, especially smaller ones, offer a limited number of foreign languages from which students may select to fulfill their foreign-language requirement. This is the case at institutions such as Clinch Valley College where students must choose among Spanish, French, and German. Larger institutions are much more likely to offer a variety of ancient and modern foreign languages; the University of Virginia, for example, offers approximately two dozen languages. Since this area is one in which students have a wide range of choice and little or no overlap of courses among different languages, smaller percentages of students typically are enrolled in individual courses. Institutions that require only three to six credits in foreign languages usually have relatively low enrollments in intermediate and advanced language courses.

Only one public four-year and one private not-for-profit institution reported foreign-language courses that meet the definition of medium-commonality courses (those in taken by 50% to 69% of the cohort): Christopher Newport University's Elementary Spanish I and II enrolled 60% and 59% respectively, while Hampden-Sydney College's Intermediate Spanish I and II enrolled 54% and 53% respectively. A total of five courses qualified as low-commonality courses: Clinch Valley College's Elementary Spanish I and II (at 43% and 41% respectively), Norfolk State University's Elementary Spanish I (at 30%), and Randolph-Macon College's Intermediate Spanish I and II (at 40%). None of the private for-profit institutions requires a foreign language.

Spanish was the language of choice at every institution that reported foreign-language enrollments except two: at Mary Washington College and Hollins University, French edged out Spanish. In fact, the only instances of languages other than Spanish and French appearing among the four most commonly enrolled foreign-language courses were Greek I and II at Liberty University (with six and five percent respectively) and Intermediate Latin at Lynchburg College (with three percent).

Table 28 shows the four foreign-language courses taken most commonly by students in the cohort at each institution. An institution-by-institution listing of all foreign-language courses that met general education requirements in 1993-1997 and the percentage of the cohort that enrolled in each course may be found in Appendix VII.

TABLE 28

The four foreign-language courses meeting general education requirements that were most commonly taken by the cohort of students at each institution and the percent of students who took each course (Foreign language courses were classified as foreign languages, humanities, communications, and global perspectives.)

	Course	%	Course	%	Course	%	Course	%
Christopher Newport	Elementary Spanish I	60	Elementary Spanish II	59	Elementary French I	19	Elementary French II	19
Clinch Valley	Elementary Spanish I	43	Elementary Spanish II	41	Elementary French I	33	Elementary French II	29
C of William and Mary	2Intermediate Spanish II	16	Intermediate Spanish I	15	Intermediate French II	12	Intermediate French I	10
George Mason	Intermediate Spanish I	23	Intermediate Spanish II	22	Elementary Spanish II	16	Elementary Spanish I	15
James Madison	Foreign languages did not fall within a category of general education courses.							
Longwood	Foreign languages did not fall within a category of general education courses.							
Mary Washington	Intermediate French I	8	Intermediate French Ii	8	Elementary French I	7	Elementary French II	7
Norfolk State	Elementary Spanish I	30	Elementary Spanish II	15	Elementary French I	6	Elementary French II	3
Old Dominion	Beginning Spanish I	15	Beginning Spanish II	10	Beginning French I	7	Beginning French II	5
Radford	Intermediate Spanish II	4	Intermediate Spanish I	3	Reading in Spanish	3	Elementary Spanish I	2
U of Virginia	Intermediate Spanish I	19	Intermediate French II	19	Intermediate French I	15	Elementary French	7
Virginia Commonwealth	Foreign languages did not fall within a category of general education courses.							

TABLE 28, continued

	Course	%	Course	%	Course	%	Course	%
Virginia Military	Foreign languages did not fall within a category of general education courses.							
Virginia Polytechnic	Foreign languages did not fall within a category of general education courses.							
Virginia State	Intermediate Spanish I	12	Intermediate Spanish II	11	Intermediate French I	3	Intermediate French II	2
Virginia Community College System	Beginning Spanish I	13	Beginning Spanish II	9	Intermediate Spanish I	4	Intermediate Spanish II	4
Richard Bland	Foreign languages did not fall within a category of general education courses.							
Averett	Spanish Conversation and Listening	11	Spanish Advanced Writing and Grammar	11	Intermediate Spanish I	9	Intermediate Spanish II	9
Bridgewater	Intermediate Spanish I	17	Intermediate Spanish II	17	Elementary Spanish I	14	Elementary Spanish II	12
Eastern Mennonite	Intermediate Spanish II	20	Intermediate Spanish I	18	Elementary Spanish I	16	Elementary Spanish II	15
Hampden-Sydney	9Intermediate Spanish I	54	Intermediate Spanish II	53	Intro. to Spanish I	47	Intro. to Spanish II	46
Hampton	Foreign languages do not fall within a category of general education courses.							
Hollins	Elementary French I	15	Intermediate French I	15	Elementary Spanish I	14	Elementary French II	13
Liberty	Elementary Spanish I	7	Greek Grammar I	6	Greek Grammar II	5	Intermediate Spanish I	4
Lynchburg	Intermediate Spanish I	63	Intermediate French I	21	Intermediate Latin	3		
Marymount	Foreign languages did not fall within a category of general education courses.							

TABLE 28, continued

	Course	%	Course	%	Course	%	Course	%
Randolph-Macon	Intermediate Spanish I	40	Intermediate Spanish II	40	Intermediate French I	19	Intermediate French II	19
Randolph-Macon Woman's	Elementary Spanish II	23	Elementary French II	22	Elementary French I	18	Elementary Spanish I	17
Roanoke	Elementary Spanish II	24	Elementary Spanish I	21	Intermediate Spanish I	12	Elementary French I	11
Saint Paul's	Foreign languages did not fall within a category of general education courses.							
Sweet Briar	Elementary Spanish I	21	Elementary Spanish II	21	Elementary French I	19	Elementary French II	19
Univ. of Richmond	Intensive Intermediate Spanish	20	Intensive Elementary Spanish	14	Intensive Intermediate French	8	Intensive Elementary French	6

History

History posed a special difficulty for this part of the study because of the variation in institutional practices regarding classification of history courses. History courses are classified as social science courses by some institutions, as humanities courses by other institutions, and simply as history courses by still others. Regardless of how the institution classified its history courses, for the purposes of this section the focus is on courses rather than on classifications.

Among the public four-year institutions, only at Clinch Valley College did the cohort of students experience a high-commonality (70% or more of the cohort enrolled) course in history: the History of Western Civilization I and II were taken by 80% and 88% respectively. Medium-commonality courses (50% to 69% of cohort enrolled) were taken by the cohort at six of these institutions: James Madison University (world history), Longwood College (modern Western civilization), Mary Washington College (American history to 1865), Norfolk State University (world civilization), Old Dominion University (American civilization), and Virginia State University (American history), as well as at Richard Bland College (American history) and within the Virginia Community College System (American history). At all of these institutions except Longwood College and Norfolk State University, the medium-commonality history course was followed by a second medium-commonality history course in a sequence (*e.g.*, Richard Bland College's American History to 1877 and American History since 1877). Low-commonality courses (30% to 49% of cohort enrolled) were taken by the cohort at Mary Washington College (American history since 1865) and Radford University (American history). No history courses at the remaining six public institutions (Christopher Newport University, the College of William and Mary, George Mason University, the University of Virginia, the Virginia Military Institute, and Virginia Tech) enrolled as many as 30% of the cohort.

Among the private not-for-profit institutions, two high-commonality history courses were taken by students at Averett College (history of Western civilization), Hampden-Sydney College (Western civilization), Lynchburg College (history of civilization), Randolph-Macon College (European history), and Saint Paul's College (world history). Students at Marymount University took one high-commonality history course (history of Western civilization), and students at Liberty University took one medium-commonality history course (American history). No history course at four of the private not-for-profit institutions (Eastern Mennonite University, Hollins University, Sweet Briar College, and the University of Richmond) enrolled as many as 30% of the cohort. At the three campuses of Bryant and Stratton College, the only private for-profit institution that submitted usable data, from 12% to 36% of the cohort enrolled in U.S. History: 1899 to date.

The survey did not differentiate among different types of history. Lists of the most commonly taken courses at each institution indicate an approximately

even distribution between American history courses and world history or Western civilization courses. Table 29 shows the four history courses most commonly taken by students in the cohort for each institution. An institution-by-institution listing of all history courses that met general education requirements in 1993-1997 and the percentage of students who took each course may be found in Appendix VII.

TABLE 29

The four history courses meeting general education requirements that were most commonly taken by the cohort of students at each institution and the percent of students who took each course (History courses were categorized as history, social science, humanities, and in other ways.)

	Course	%	Course	%	Course	%	Course	%
Christopher Newport	History of Western Civ I	15	History of American Civ I	14	History of Western Civilization II	12	History of American Civ II	12
Clinch Valley	History of Western Civ II	88	History of Western Civ I	80	American History I	54	American History II	34
C of William and Mary	History of Europe	23	American History	17	Survey East Asian Civilization	4	Survey Latin American History	4
George Mason	Formation of American Republic	20	Development of Modern America	17	History of Western Civilization	14	Development Western Civilization	8
James Madison	World History Since 1650	65	World History to 1650	54	US Since 1877	29	US to 1877	27
Longwood	Modern Western Civilization	57	Foundations of Western Civ	43				
Mary Washington	American History to 1865	32	American History since 1865	27	Western Civilization I	27	Western Civilization II	23
Norfolk State	History of World Civilization	59	Afro-American History	31	Afro-American History to 1865	31	US History since 1877	25
Old Dominion	American Civ in a World Setting I	68	American Civ in a World Setting II	64	Western Civ in a World Setting I	29	Western Civ in a World Setting II	23
Radford	US History to 1877	37	US History since 1877	36	World History to 1650	33	World History after 1650	32

TABLE 29, continued								
	Course	**%**	**Course**	**%**	**Course**	**%**	**Course**	**%**
U of Virginia	History of Civil Rights Movement	12	American History since 1865	9	New Testament-Early Christianity	7	Intro Western Religious Tradition	6
Virginia Commonwealth	Survey of American History I	36	Survey of American History II	32	Survey of European History I	16	Survey of European History II	13
Virginia Military	Western Civilization II	69	Western Civilization I	68	World History I	.3	World History II	3
Virginia Polytechnic	History of US I	12	History of US II	11	Intro. to European Civilization I	7	Intro. to European Civilization II	5
Virginia State	US History II	62	US History I	58	World Civilization I	31	World Civilization II	5
Virginia Community College System	US History I	59	US History II	50	History of West Civilization I	24	History of Western Civilization II	19
Richard Bland	Am. History to 1977	53	Am. History since 1877	52	Western Civilization to 1815	28	Civil War 1861-1877	9
Averett	History of Western Civ I	92	History of Western Civ II	89	American History I	35	American History II	23
Bridgewater	Western Civilization to 1500	54	Western Civilization since 1815	48	Western Civilization 1500-1815	33	Southeast Asia	22

TABLE 29, continued

	Course	%	Course	%	Course	%	Course	%
Eastern Mennonite	Colonial America	11	Modernization of America	10	African-American History: 1865-present	7	History of Recent America	7
Hampden-Sydney	Western Civilization I	81	Western Civilization II	87	US History I	45	US History II	44
Hampton	World Civilization II	97	Survey of African History	79	World Civilization I	24		
Hollins	US Survey I	23	Historical Documentary	13	US Survey II	13	American Social History	7
Liberty	Survey of American History I	50	History of Western Civilization I	29	Survey of American History II	26	History of Western Civilization II	17
Lynchburg	History of Civilization II	93	History of Civilization I	92				
Marymount	History of Western Civ I	78	History of US to 1877	33	History of US since 1877	26	Heritage of Great Britain	15
Randolph-Macon	European Ren to 1815	97	Europe since 1815	96	Origins of Civilization	3	S. American Revolution	2
Randolph-Macon Woman's	20th C. Europe	33	American History, 1865 to present	33	American History to 1865	26	Modern Europe from 1750 to 1900	15

TABLE 29, continued

	Course	%	Course	%	Course	%	Course	%
Roanoke	Civilization II: History	33	Civilization I: History	30				
Saint Paul's	World History since 1650	97	US History to 1877	97				
Sweet Briar	US: 1877 to present	17	Vietnam, France & Am. in 20th C.	13	US: 1600 to 1877	12	From Roosevelt to Reagan	12
Univ. of Richmond	US since 1877	11	Ideas & Institutions/ Western Civ I	10	US to 1877	9	Ideas & Institutions/ Western Civilization II	9

Natural and physical sciences

Institutions offer a wide variety of natural and physical science courses, and the most common requirement for such courses is a two-semester sequence in one laboratory science. Thus, because a cohort is divided among biology, chemistry, physics, geology, and possibly other science courses, it is unusual for institutions to have a large percentage of students in any one natural or physical science course.

Richard Bland College was the only institution participating in the study at which the cohort of students took two high-commonality science courses (General Biology I and II, with 90% and 81% respectively). At Christopher Newport University, students took one high-commonality course (General Biology I at 83%), and at Norfolk State University they took one high-commonality course (Biological Sciences at 76%); at both institutions the second course in the sequence was medium-commonality (50% to 69% of the cohort enrolled). Students at three public four-year institutions (Mary Washington College, Radford University, and Virginia State University) took two medium-commonality science courses, while students at five others (Clinch Valley College, the College of William and Mary, George Mason University, James Madison University, and Virginia Tech) plus the Virginia Community College System took one medium-commonality science course. No science courses at three public four-year institutions (Old Dominion University, the University of Virginia, and Virginia Military Institute) enrolled as many as 30% of the cohort of students.

Among the 15 private not-for-profit institutions, only at Bridgewater College did students in the cohort take a high-commonality science course (Natural World Biology at 84%). Students at six of these institutions (Eastern Mennonite University, Hampden-Sydney College, Hampton University, Randolph-Macon College, Saint Paul's College and Sweet Briar College) took a medium-commonality science course, while the cohort at five institutions (Averett College, Liberty University, Lynchburg College, Marymount University, and the University of Richmond) took a low-commonality science course. No science courses at three private not-for-profit institutions (Hollins University, Randolph-Macon Woman's College, and Roanoke College) enrolled as many as 30% of the cohort of students. None of the private for-profit institutions had a science requirement.

Biology was the most popular choice among the science courses taken by the cohort. Chemistry was the second most popular choice, with physics, microbiology, oceanography, astronomy, meteorology, environmental science, and anatomy and physiology also represented. At two institutions (the College of William and Mary and Averett College), Psychology as a Natural Science was the science course most commonly taken by the cohort.

Table 30 shows for each institution the four natural and physical science courses taken most frequently by students in the cohort. An institution-by-institution listing of all natural and physical science courses that met general education requirements in 1993-1997 and the percentage of the cohort that enrolled in each course may be found in Appendix VII.

TABLE 30

The four natural-and-physical-science courses meeting general education requirements that were most commonly taken by the cohort of students at each institution and the percent of students who took each course (Natural-and-physical-science courses were categorized as science, natural science, physical science, and math/science, among other ways.)

	Course	%	Course	%	Course	%	Course	%
Christopher Newport	General Biology I	83	General Biology II	69	Elementary Physics I	28	Elementary Physics II	25
Clinch Valley	Principles of Biology	53	Introduction to Biology	49	College Chemistry I	30	College Chemistry II	20
C of William and Mary	Introduction to Psychology as a Natural Science	51	General Chemistry I	33	Principles of Biology	31	Physical Geology	26
George Mason	Intro. Biology I	50	Intro. Biology II	44	General Chemistry I	19	Cell Structure & Function	14
James Madison	Contemporary. Biology	54	Intro. to Oceanography	35	Earth & Man	35	General Chemistry II	16
Longwood	Biological Sciences – Gen. Botany	49	Earth Science	42	General Physics	19	General Chemistry	8
Mary Washington	Biological Concepts I	56	Biological Concepts II	55	Intro. to Geology	29	General Chemistry	28
Norfolk State	Biological Sciences	76	Physical Science	51	Chemistry: Man & Environment	24	General Biology	16
Old Dominion	Life Science I	28	Life Science II	28	Intro. Oceanography	22	Foundations of Chemistry	21

TABLE 30, continued

	Course	%	Course	%	Course	%	Course	%
Radford	Principles of Biology I	69	Principles of Biology II	62	General Geology I	25	General Geology II	20
U of Virginia	Intro College Chemistry	25	Intro. College Chemistry Lab	25	Intro. Biology I	23	Intro. to Biology II	23
Virginia Commonwealth	Science was not required in VCU's general education program during the cohort study. It now is required.							
Virginia Military	Chemical Science II	6	Intro. College Chemistry II	1	Chemical Science I	.5		
Virginia Polytechnic	General Chemistry I	50	General Chemistry II	44	General Biology I	26	General Biology II	25
Virginia State	Biological Science	59	Earth Science	55	Chemistry & Society	7		
Virginia Community College System	General Biology I	55	General Biology Lab	45	General Biology II	36	College Chemistry	17
Richard Bland	General Biology I	90	General Biology II	81	General Chemistry	17	Human Anatomy & Physiology	15
Averett	Psychology as a Natural Science	38	General Chemistry I	20	Weather & Climate	18	Survey of Physical Science	17
Bridgewater	Natural World Biology	84	Intro to Biology	28	Intro Astronomy	27	General Chemistry II	24

TABLE 30 continued

	Course	%	Course	%	Course	%	Course	%
Eastern Mennonite	Bioscience	56	Food & Population	38	Human Anatomy & Physiology	16	Life-Science Chemistry	12
Hampden-Sydney	Intro to Biology	60	Chemical Concepts	39	Stellar, Galactic & Extragalactic Astronomy	27	Astronomy of the Solar System	21
Hampton	Intro. to Physical Science I	50	Nature of Life	46	General Biology	45	Intro to Physical Science II	8
Hollins	Basic Life Sciences	26	Diversity among Organisms	16	General Chemistry I	11	Biol. Women/ Social Implications	11
Liberty	Intro Biology	33	Physical Science I	18	Physical Science II	16	Human Anatomy/ Physiology	14
Lynchburg	Psychology	48						
Marymount	Intro to Environ. Science	37	Astronomy	16	Earth Science	14	Anatomy & Physiology I	14
Randolph-Macon	Environ. Science	54	General Biology I	49	Intro. to Geology	28	General Chemistry	12
Randolph-Macon Woman's	Conservation of Natural Resources	28	General Chemistry	24	Physiology	23	Zoology	20

TABLE 30 continued

	Course	%	Course	%	Course	%	Course	%
Roanoke	Life Science II	16						
Saint Paul's	Biological Science	51						
Sweet Briar	Intro. Psychology	65	Intro. to Organisms	23	Social Psychology	19	Developmental Psychology	18
Univ. of Richmond	Contemporary Approach to Life Science	34	Discovering Life in the 21st Century	29	Intro. to Plant Biology	25	Fundamentals of Chemistry	20

Social sciences

Institutions offer a wide variety of social science courses, a classification that typically includes such disciplines as economics, sociology, government, anthropology, and psychology. Because foundational courses in these areas are necessary for so many majors and careers, they tend to be more heavily enrolled than courses in foreign languages or the natural and physical sciences.

At Radford University, 99% of the cohort took Introductory Psychology. At five other public institutions students took at least one high-commonality (70% or more of the cohort enrolled) social-science course: Richard Bland College's General Psychology I at 88%, Virginia State University's Introduction to Psychology at 85%, Clinch Valley College's Introduction to Sociology at 80%, George Mason University's Basic Concepts of Psychology at 73%, and Mary Washington College's General Psychology at 72%. At Radford University, Clinch Valley College, and Richard Bland College, students took two high-commonality social-science courses. At the remaining nine public four-year institutions, students took a medium-commonality (50% to 69% of the cohort enrolled) social-science course, with the exception of James Madison University, where 47% of the cohort took General Psychology I. (The Virginia Military Institute did not have a recognizable social-science category.) Within the Virginia Community College System, 55% of the cohort took Introduction to Psychology.

At nine of the 14 private not-for-profit institutions with a recognizable social-science category, students took at least one high-commonality social-science course. At six of these nine (Averett College, Bridgewater College, Hampden-Sydney College, Marymount University, Roanoke College, and Saint Paul's College), students took two high-commonality courses. Of the other five private not-for-profit institutions, two had medium-commonality and three had low-commonality social-science courses. Saint Paul's College, where 97% of the cohort took both World History since 1650 and U.S. History since 1877 and Marymount University, where 97% took General Psychology reported the highest commonality. On the list of the most commonly enrolled social-science course at each institution, Hollins University, where 38% took Introduction to Contemporary Economics, and Randolph-Macon College where 39% took Principles of Micro-Economics, reported the lowest commonality. None of the private for-profit institutions had a social-science requirement.

At the public institutions, psychology was by far the most popular choice among the social-science courses taken by the cohort. At nine of the public four-year institutions plus the Virginia Community College System, psychology was the social-science course taken by the highest percentage of the cohort. At three institutions (Christopher Newport University, the College of William and Mary, and the University of Virginia) economics was the first choice, and at two (Clinch Valley College and Longwood College) it was sociology. Among the private not-for-profit institutions, the choices were more evenly distributed among

psychology (five institutions), economics (three), sociology (three), and history/Western civilization (three).

Table 31 on the next page shows the four social-science courses most commonly taken by students in the cohort at each institution. An institution-by-institution listing of all social science courses that met general education requirements in 1993-1997 and the percentage of the cohort that enrolled in each course may be found in Appendix VII.

TABLE 31

The four social-science courses meeting general education requirements that were most commonly taken by the cohort of students at each institution and the percent of students who took each course (Social science courses were categorized in many ways and were not necessarily identified as social sciences.)

	Course	%	Course	%	Course	%	Course	%
Christopher Newport	Principles of Economics I	53	Principles of Economics II	48	Developmental Psychology	37	Introductory Psychology	36
Clinch Valley	Intro. to Sociology	80	Intro. to Psychology	76	Microeconomic Principles	61	Am. National Politics	53
C of William and Mary	Principles of Economics	51	Intro. to Psychology as a Natural Science	51	Intro. to Psychology as a Social Science	50	Principles of Macroeconomics	42
George Mason	Basic Concepts - Psychology	73	Intro. to Cultural Anthropology	63	Introductory Sociology	56	Contemp. Econ Prin/Issues I	51
James Madison	General Psychology I	47	Intro. Sociology	46	General Psychology II	44	Principles of Economics (Micro)	43
Longwood	Principles of Sociology	56	Am. Government and Politics	35	Contemp. Social Problems	31	Psychology and Life	20
Mary Washington	General Psychology	72	Principles of Macroeconomics	49	Social Problems	45	Geog. of Western Anglo/America	42
Norfolk State	Intro. to Psychology	60	History of World Civilization	59	Logic: Critical Thinking	58	Principles of Economics	47
Old Dominion	Abnormal Psychology	60	World Religions	16	Logic and Philosophy	14	Bioethics	6
Radford	Intro. Psychology	99	Intro Sociology	86	Principles of Economics	47	Child Psychology	44

TABLE 31, continued

	Course	%	Course	%	Course	%	Course	%
U of Virginia	Principles of Economics	53	Principles of Economics (Macro)	37	General Psychology	34	Intro. to Anthropology	23
Virginia Commonwealth	General Psychology	64	General Sociology	58	Human Sexuality	43	Cultural Anthropology	33
Virginia Military	Did not have a recognizable social-science category							
Virginia Polytechnic	Intro. Psychology	54	Principles of Economics I	41	Intro. Sociology	38	Principles of Economics II	37
Virginia State	Intro. to Psychology	85	US History II	62	US History I	58	Prin. of Microecon.	38
Virginia Community College System	Intro. to Psychology	55	Intro. to Psychology II	39	Intro. Sociology	35	Principles of Economics	27
Richard Bland	General Psychology I	88	General Psychology II	70	General Sociology	53	American History to 1877	51
Averett	History of Western Civilization I	92	History of Western Civilization II	89	Intro. to Sociology	49	Marriage and the Family	49
Bridgewater	Principles of Sociology	78	General Psychology	73	Principles of Macroeconomics	56	Principles of Microeconomics	47
Eastern Mennonite	Did not have a recognizable social-science category							

TABLE 31, continued

	Course	%	Course	%	Course	%	Course	%
Hampden-Sydney	Western Civilization	81	Western Civilization II	78	Psychology as a Natural Science	78	Intro. to Economics	72
Hampton	Intro. to Sociology	62	Intro. to Psychology	59	Principles of Economics	43	Principles of Economics	30
Hollins	Intro Contemporary Economics	38	US Survey I	23	American Government	23	Schooling in Am. Society	22
Liberty	Develop. Psychology	71	General Psychology	63	Const. Gov. and Free Enterprise	48	Intro. to Geography	22
Lynchburg	Intro. to Sociology	74	Principles of Economics - Micro	26	Principles of Economics - Macro	19	Quest for Justice	17
Marymount	General Psychology	97	Prin. of Sociology	73	American Government	58	Principles of Microeconomics	51
Randolph-Macon	Principles of Economics - Micro	39	Principles of Economics - Macro	39	General Psychology	33	Am. Government and Politics	25
Randolph-Macon Woman's	Intro. to Psychology I	56	Intro. to Psychology II	53	Principles of Macroeconomics	38	Cultural Anthropology	31
Roanoke	Intro. to Psychology	77	Intro. to Sociology	74	Am. National Government	35	Modern Politics	25

TABLE 31, continued

	Course	%	Course	%	Course	%	Course	
Saint Paul's	World History Since 1650	97	US History Since 1877	97	Intro. to Philosophy	91	Intro. to Sociology	34
Sweet Briar	Intro. Psychology	65	Intro. Economics II	35	Intro. Economics I	33	Intro. to Sociology	33
Univ. of Richmond	Principles of Microeconomics	47	Interpersonal Communication	34	Intro. to Sociology	33	Intro. to International Relations	29

Humanities

Among the disciplines that have traditionally been considered to make up the humanities are literature, philosophy, religion, history, and the arts. Today, institutions do not agree on what types of courses are classified as humanities, and not all institutions have a category that is labeled "humanities." At some institutions, courses of this kind may be found under other groupings, e.g., category 5, goal 4, or "the Western perspective." For the purposes of this analysis, the institutional category that most closely resembled the humanities was used. History and foreign languages were included only if the institution specifically categorized them as humanities.

Among the notable findings for this section is that, at both public and private institutions, few courses can be categorized as high-commonality or medium-commonality courses. The listings of courses for the humanities reveal that in general institutions have a large number of courses from which students may select to meet their general education requirements in the humanities. At some institutions, students may select from over 200 courses. The percentage of the cohort who took specific humanities courses typically decreases rapidly, so that few humanities courses are taken in common. It was not unusual to find that fewer than 10% of the cohort took many of the courses within the humanities. At some institutions, courses were listed as meeting the general education requirements in the humanities, but not a single student from the cohort had taken the course. While these courses were appropriate for the institutions to offer -- they include Survey of French Literature at Christopher Newport University, Contemporary World Literature at Old Dominion University, and Intermediate Microeconomic Theory at Marymount University, for example -- these courses did not appear to meet the needs of the cohort of students who took the institution's general education program.

Only three of the public institutions reported humanities courses that qualified as high-commonality courses, and these have already been treated in other categories (as history for Clinch Valley College and as writing for Richard Bland College and Virginia State University). At five of these institutions, humanities course qualified as medium-commonality courses: Introduction to the Arts I and II at Christopher Newport University (at 60% and 58% respectively), American Literature (at 62%) and Modern Western Civilization (at 57%) at Longwood College, Literature of the Western World (at 59%) and Music Appreciation (at 50%) at Norfolk State University, Introductory Philosophy (at 60%) and Enjoying Literature (at 53%) at Old Dominion University, and Masterpieces of American Literature (at 68%) at Radford University. No humanities courses enrolled 30% or more of the cohort at three institutions (the College of William and Mary, George Mason University, and the University of Virginia), while at Virginia Tech only one humanities course met this threshold, Introduction to Theatre at 32%. The Virginia Military Institute did not have a recognizable humanities category for this cohort of students.

The patterns at the private not-for-profit institutions were similar. Ten humanities courses met the definition of high-commonality courses, but six of these were already reported as history courses. The other four courses were Averett College's Introduction to Literature at 73%, Hampton University's Humanities I at 98%, Saint Paul's College's Introduction to Literature at 86%, and Saint Paul's College's Speech Fundamentals at 77%. Six additional courses qualified as medium-commonality courses: Averett College's Modern British Authors of the 19th and 20th Centuries at 53%, Bridgewater College's Modern Western Thought at 64%, Eastern Mennonite University's Experience the Humanities at 68% and Process and Ambiguity at 52%, Hampden-Sydney College's Introduction to Biblical Studies at 53%, and Hollins University's Fundamentals of Writing Poetry/Fiction at 52%. Approximately one-fifth of the cohort at the University of Richmond took a course entitled Shakespeare. Neither Roanoke College nor Sweet Briar College had a clearly defined category corresponding to the humanities for this cohort of students.

Table 32 shows the four humanities courses most commonly taken by students in the cohort at each institution. An institution-by-institution listing of all humanities courses that met general education requirements in 1993-1997 and the percentage of the cohort that enrolled in each course may be found in Appendix VII.

TABLE 32

The four humanities courses meeting general education requirements that were most commonly taken by the cohort of students at each institution and the percent of students who took each course (Humanities courses were categorized in many ways, and not all courses were identified as "humanities." History and foreign-language courses were included only if the institution classified them as humanities courses.)

	Course	%	Course	%	Course	%	Course	%
Christopher Newport	Intro. to the Arts I	60	Intro. to the Arts II	58	Intro. to World Religions	42	Ancient Philosophy	41
Clinch Valley	History of Western Civilization II	88	History of Western Civilization I	80	American History	54	American History	34
C of William and Mary	Intro. to Philosophy	26	Major Am. Writers	21	Survey of History of Art II	20	Ethics	18
George Mason	Literature and Society II	24	Survey American Literature II	24	Readings English & Am.. Literature II	23	Intro. to Philosophy	21
James Madison	Religions of the World	33	Survey of Am. Lit.: Civil War	29	Intro. to Philosophy	23	Survey of Prose Fiction	22
Longwood	American Literature	62	Modern Western Civilization	57	Foundations of Western Civilization	43	Western Literature	23
Mary Washington	Intro. to Political Science	40	Intro. to Political Science	33	Am. History to 1865	32	Am. History since 1865	29
Norfolk State	Lit. of the Western World	59	Music Appreciation	50	Humanities: Cross Cultural Exploration	30	Elementary Spanish	30
Old Dominion	Intro. Philosophy	60	Enjoying Literature	53	Am. Writers & Experience	35	World Religions	16

TABLE 32, continued

	Course	%	Course	%	Course	%	Course	%
Radford	Masterpieces Am. Literature	68	Intro. to Philosophy	38	Masterpieces of British Lit.	28	Intro. to Religion	24
U of Virginia	Orchestral Music	25	Intro. Eastern Religious Tradition	18	History of Jazz	16	Religious Ethics & Moral Problems	13
Virginia Commonwealth	Cultural Anthropology	33	Am. Literature II	31	Am. Literature I	28	Western World Literature	10
Virginia Military	Did not have a recognizable humanities classification							
Virginia Polytechnic	Intro to Theatre	32	Morality and Justice	13	Music Appreciation	12	Knowledge and Reality	11
Virginia State	Reading and Writing about Literature I	99	Freshman Writing	97	Advanced Communication Skills	70	Philosophy	51
Virginia Community College System	United States History I	59	United States History II	50	Survey of Am. Literature I	30	History of Western Civ I	24
Richard Bland	Writing and Research	98	Intro to Literary Genres	97	Music Appreciation	45	Art Appreciation	27
Averett	Intro. to Literature	73	Major British Authors: 19th-20th Century	53	Major British Authors: through 18th Century	43	Literature of the Western World	8
Bridgewater	Western Thought - Modern	64	Intro. to Philosophy	39	Western Thought - Renaissance	23	Archeology Biblical World	13
Eastern Mennonite	Experience the Humanities	68	Progress and Ambiguity	52	Reason and Romanticism	46	Acting I	11

TABLE 32, continued

	Course	%	Course	%	Course	%	Course	%
Hampden-Sydney	Intro. to Biblical Studies	53	Logic	33	Intro. to Religion	12	Intro. to Music Literature	26
Hampton	Humanities I	98	World Civilization II	97	Humanities II	96	Survey African History	79
Hollins	Fundament Writing Poetry/Fiction	52	Expository Writing	23	Critical Thinking	23	Elementary French	15
Liberty	Elementary Spanish I	7	Greek Grammar I	6	Greek Grammar II	5	Elementary Spanish Ii	4
Lynchburg	History of Civilization Ii	93	History of Civilization I	92	World Literature	83	Intro. Philosophical Problems	81
Marymount	History of Western Civilization I	78	Philosophers of the West	42	Intro. to Religion	41	History of the US to 1877	32
Randolph-Macon	Europe: Renaissance to 1815	97	Europe Since 1815	96	Composition and Grammar	80	Composition and Grammar	49
Randolph-Macon Woman's	Women Writers	33	Bioethics	24	Ragtime, Blues, and Jazz	22	Major Am. Writers - The Romantics	21
Roanoke	Did not have a recognizable humanities category							

TABLE 32, continued

	Course	%	Course	%	Course	%	Course	%
Saint Paul's	Intro to Literature	86	Speech Fundamentals	77	Intro. to Literature	74	Freshman English	66
Sweet Briar	Did not have a recognizable humanities category							
Univ. of Richmond	Exploring Human Experience I	49	Exploring Human Experience II	47	Shakespeare	19	Love and War in Medieval Literature	10

Part Four: Assessment of general education programs

In Part One of this study, readers learned that all but two of the Virginia institutions participating in this study reported that they either already had learning goals for their general education programs or were in the process of developing them. Also in Part One, readers were given examples of learning goals and the more specific learning objectives that are intended to articulate what institutions expect of students. These general learning goals and more specific learning objectives together provide the framework for what is known as assessment, which will be the focus of Part Four. As used in this part of the study, the term "assessment" refers to making expectations explicit, setting high standards for performance, systematically analyzing and interpreting evidence to determine how well performance matches expectations, and using the results to document and improve performance.[iv]

4.0 Historical background

When Virginia initiated its assessment program in 1987, the Council of Higher Education asked each public institution to define what it wanted its students to know as a result of its general education program and how the institution expected to determine whether or not it had been successful. Many institutions struggled in their initial efforts to comply with the Council's request. Virginia institutions were not alone, for across the nation institutions and associations[v] involved in assessment reported that assessment of general education was more difficult than was assessment of other academic programs, in part because institutions had difficulty making explicit what results they expected from their general education programs. For example, a goal that states "upon the completion of the general education program, students should be able to think clearly and creatively about ideas, issues, and texts both within and across academic disciplines" may generate diverse interpretations, making assessment of such a goal notoriously difficult.

When Virginia's public institutions began assessing their general education programs, many of them used nationally normed examinations. After a trial period, most institutions determined that those examinations did not adequately reflect what the institutions taught in their general education programs, did not provide data that could be used for improvement of the programs, and/or were very costly.

Through early assessment practices and findings, several Virginia institutions found that their general education programs were not well defined and that they lacked focus. In some cases, those findings stimulated changes in the general education programs. For example, James Madison University

reported that early efforts to assess its Liberal Studies Program revealed unsatisfactory results:

> [It] suggested that the program was not having the impact on student learning that we desired. Consequently, the institution elected to totally redesign our core Liberal Arts curriculum now titled the General Education Program. The use of assessment results of this type was the first instance in which the University undertook a significant program modification based on hard data regarding student learning.

Since then, James Madison University has implemented a competency-based basic-skills curriculum including technology, critical thinking, and oral and written communication. In the near future, it will require that students demonstrate competency in these areas before being allowed to progress to their sophomore year. In other parts of its new general education program, James Madison has embedded assessment into its cross-disciplinary structure.

Because of the Council of Higher Education's emphasis on assessment, Virginia public institutions have been well-positioned over the past decade as they documented the "institutional effectiveness" criterion that must be met as part of the reaccreditation process of the Southern Association of Colleges and Schools. During their reaccreditation visits, SACS teams have noted this strength at several Virginia public institutions, including James Madison University, Virginia Commonwealth University, Virginia Western Community College, and Wytheville Community College.

4.1 Overview of assessment methods

Consistent with the guidelines of the State Council of Higher Education for Virginia, the *Principles of Good Practice for Assessing Student Learning,*[vi] and nationwide best practices in assessment, institutions use a variety of methods to help them determine whether their general education programs meet their goals. The survey used in this study requested institutions to describe their assessment methods and to group them into the following categories: nationally developed programmatic methods, locally developed programmatic methods, course-specific methods, course grades, student-perception surveys, alumni-perception surveys, employer-perception surveys, student portfolios, and "other." Some measures are more appropriate than others for assessing learning in specific disciplines. For example, standardized examinations (a nationally developed programmatic measure) are available and used in areas such as mathematics and foreign languages, but are not widely available to assess many aspects of the general education curriculum, *e.g.,* global or international issues.

The survey for this study requested institutions to select one or more of the categories above for each of the content areas (*e.g.*, humanities or natural science) and skills areas (*e.g.*, computer technology or writing skills). By doing so, institutions could make multiple selections and differentiate the ways in which they assessed each area. The responses of 13 of the 15 public four-year institutions, 21 of the 24 public two-year institutions, 12 private not-for-profit institutions, and eight private for-profit institutions were entered into a matrix. The full matrix has 1,934 entries that summarize the many assessment methods used by each institution. A brief summary of this matrix appears below as Table 33, which gives the average number of assessment methods in each category by institutional type.

	Public 4-year	Public 2-year	Private not-for profit	Private for-profit	All institutions
Nationally developed examinations	1.2	3.8	1.1	0	1.9
Locally developed examinations	5.1	3.9	1.8	0.8	3.1
Course-specific methods	7.2	6.2	3.1	5.9	5.5
Course grades	7.2	10.1	6.7	6.5	7.8
Student perception surveys	8.8	5.7	4.3	4.3	5.7
Alumni perception surveys	9.3	5.1	3.3	3.9	5.3
Employer perception surveys	2.1	2.0	0.9	3.3	1.9
Student portfolios	3.9	5.2	0.3	2.4	1.5
Other methods	4.0	1.1	0	2.6	1.7
Total for all methods	48.8	43.1	21.5	29.7	34.4

TABLE 33
Average number of assessment methods in each category by institutional type

Table 33 shows that the public institutions, both two- and four-year, have a greater number and variety of assessment methods than do their private counterparts. Given the state's mandate for public institutions to conduct student assessment, this finding is not surprising. On average, the private for-profit institutions reported that they conduct a larger number of assessment techniques than do their private not-for-profit counterparts.

4.2 Course grades

The single most commonly reported assessment method used was course grades, a measure the Council staff considers flawed. Course grades consolidate learning across a variety of topics and do not allow the more detailed examination of learning in specific areas within a course. More importantly, they examine learning only in one part of a curriculum and do not provide relevant data about students' attainment of the curricular goals, nor do they provide data for improvement within the entire general education program. The use of course grades is not consistent with long-standing Council of Higher Education assessment guidelines.

Course grades, however, was the single most common assessment method used in the public two-year, private not-for profit, and private for-profit institutions; it is used almost twice as commonly as any other measure in the public two-year institutions. Although course grades were used by the public four-year institutions, course-specific methods (*e.g.,* embedded questions in examinations) were used as commonly and student- and alumni-perception surveys were more commonly used methods. Course grades was the only method used by World College and Sweet Briar College. It is the only method, other than course-specific methods, used by Randolph-Macon Woman's College, and it is the primary method used at the University of Richmond and Virginia Intermont College.

4.3 Perception surveys

Student perception surveys, the second most common method for assessing student performance, were used by all four types of institutions, generally in combination with other methods. While the national literature indicates that perception surveys are a good proxy for other measures of student learning, they are not direct measures of it. Nevertheless, they supplement direct measures of learning. Both locally developed and nationally developed student perception surveys are in wide use in Virginia, and two institutions, Dominion College and Eastern Mennonite University, rely entirely on this method of assessment.

Alumni perception surveys are used by every responding institution, and each asks in some way about the quality of the respondent's educational program. So widespread are alumni surveys that the Virginia Department of Planning and Budget used responses to specific questions in alumni surveys as part of its Performance Measures project. Although none of the questions related specifically to general education, alumni did rate their overall educational experiences. [Readers wishing more information about these issues could review pages 32 to 36 of the State Council of Higher Education's publication,

Indicators of institutional mission # 5 - What happens to the graduates? See http://www.schev.edu/restudies.html.]

Institutions use the opinions of employers to provide information about the effectiveness of their graduates. This is accomplished through surveys, focus groups, advisory committees, and employer evaluation of student work in internships and capstone courses. Although these methods are more commonly used in assessment of specific degree programs than in general education, employer opinions generally are very useful to campuses as they strive to improve their general education programs. Clinch Valley College, for instance, surveys employers to determine their perception of the effectiveness of the college's graduates in terms of writing, problem solving, and critical thinking.

4.4 Nationally and locally developed examinations

Both nationally and locally developed examinations have benefits. Nationally developed examinations are designed to compare the knowledge and skills of students with their counterparts in other regions of the nation, but may not be well-aligned with the general education curriculum at the college at which they are administered, whereas locally developed examinations do the latter but cannot provide comparable data with other parts of the country.

Locally developed assessment measures are used at several institutions. Longwood College, Mary Washington College, and Virginia Western Community College are among those that embed questions that assess general education in end-of-course examinations taken by students. Liberty University uses pre- and post-tests in English and mathematics, while Hampden-Sydney College is among the institutions that use placement tests in the assessment program.

One locally developed examination, the Schoch-Tucker Assessment of General Education (STAGE), developed by the faculty at Mountain Empire Community College with assistance from some other community colleges, is used by Dabney S. Lancaster, J. Sargeant Reynolds, Mountain Empire, Paul D. Camp, Virginia Highlands and Wytheville Community Colleges. Some of these institutions had used a nationally developed examination, the Academic Profile, but changed to the STAGE because the former examination had significant costs and did not provide useful data for curriculum development. Locally developed examinations often are criticized because they have not had adequate testing for reliability or validity. The STAGE examination, however, has been used for several years and has been found reliable.

Some of Virginia's institutions currently use or plan to use nationally developed examinations to assist in the evaluation of their general education programs, although other institutions have eliminated the use of these exams. Longwood College, for example, soon will begin using the ACT COMPASS

examination tests of writing, reading, and mathematics as sophomore exit-tests for general education, and Clinch Valley College uses the ACT Alumni Outcomes Survey. Marymount University has used but is discontinuing the use of the ACT COMP examination, and will replace it with other, as of yet unidentified measures. Blue Ridge, Central Virginia, Eastern Shore, Rappahannock, and Tidewater Community Colleges use the Academic Profile Test.

Among other nationally developed measures in use in Virginia are the Collegiate Assessment of Academic Proficiency (CAAP) (used by Richard Bland College, Danville Community College, and Southside Virginia Community College, Southwest Virginia Community College) and The Community College Student Experiences Questionnaire (used by Blue Ridge and Rappahannock Community Colleges). John Tyler Community College, which has relied heavily on survey data, is considering adding the Watson-Glaser Critical Thinking Appraisal as an assessment instrument.

A few institutions reported using the results of Graduate Record Examinations or of entrance into law, medical, or other graduate schools as part of their overall assessment. Washington and Lee University specifically mentioned using those examinations in its assessment processes.

As part of its response, Paul D. Camp Community College provided its assessment criteria in which it detailed the skills, means of measurement, and criteria for satisfactory student achievement. The last component - the criteria for satisfactory achievement- is one that the Council staff believes is important for institutions to set. Institutions should determine what they consider success so that they can measure their progress against that measure. Northern Virginia, Southside Virginia, and Tidewater Community Colleges submitted similar matrices detailing their assessment goals, measures, and criteria.

Although this was not reported in the survey, institutions, both public and private, are in the process of developing other examinations to measure students' technology skills. The Virginia Foundation for Independent Colleges has piloted an examination of this type and several public institutions are in the process of developing a similar examination.

4.5 Powerful but less commonly used methods

Some of the less commonly used assessment methods often are the most powerful and provide the best data on which curricular changes can be made. Among these are locally developed methods (often capstone courses involving detailed assessment processes), course-specific methods (often specific assessment questions embedded into course examinations), and portfolios. This section will provide more information on these and other methods.

Several institutions use portfolios in the assessment of general education or specific parts of the general education program. Institutions use several variations of portfolios, including student and course portfolios. In a somewhat typical portfolio process, the faculty collects portfolios of student work, including written assignments, examinations, and presentations (often using presentation software or videotape), and evaluates the student work according to pre-set scoring rubrics. The portfolios may include all work or samples of it, and they may be for specific courses or they may be ones in which students collect their work over an extended period. By evaluating student performance over a period of time, evaluators can assess learning over the students' careers while at the same time assessing in detail the students' ability to write coherently, make reasoned arguments, and meet other learning goals.

The College of William and Mary, Virginia State University, and James Madison University are among the public institutions using portfolios of student work in the assessment of general education. Working groups within Arts and Sciences at the College of William and Mary submit reports to the Educational Policy Committee, which in turn reports its findings and recommendations to the college's Dean of the Faculty. The dean then uses the assessment findings in making budget/resource allocations and in providing faculty development opportunities. Virginia State University uses similar processes. James Madison University developed a portfolio approach for assessing the group of courses it calls Cluster One. In this portion of its newly adopted curriculum, James Madison uses multiple assessment methods, including portfolios for assessment of freshman writing. Among the private institutions, Bridgewater College ambitiously uses portfolios to assess the personal development of every graduate; although the portfolio program is not specifically related to general education, it covers both the academic and nonacademic aspects of students' growth.

Part One of this study described the institutions that reported using capstone courses as a part of their general education programs. These culminating experiences require that students integrate their learning from throughout the program, often by producing an individual or group project that is evaluated by the faculty or, in some cases, by employers or experts from the community. When assessment is included in the expectations of capstone

courses, it is considered a very effective assessment method. None of the public four-year institutions reported that they currently use capstone courses in general education, although Clinch Valley College has developed and piloted a capstone course for its general education program. Two public two-year institutions, five private not-for-profit, and four private for-profit institutions reported having capstone courses for general education, but none of them described the courses or their assessment of them.

One method instituted originally by Old Dominion University and more recently by several other institutions is a review of how course syllabi from each school within the university match with the goals for the general education program. When Old Dominion University initiated this process, it found differences, some expected and some not, in the ways in which the university's general education goals were addressed. After the university had completed this review, it made a number of curricular changes so that its courses more strongly supported the goals of the general education program. Old Dominion University also uses another relatively uncommon assessment technique: an exit writing examination. This requirement has been in effect for many years, and every student must pass it before graduating from the university.

The University of Virginia uses a longitudinal study to assist in the assessment of its general education program. Its first such study closely followed a cohort of students as it progressed through the curriculum. Although that study focused on non-academic subjects, in its current longitudinal study the university is using a variety of methods, including surveys, focus groups, and interviews, as part of its general education assessment.

In accordance with the Council's assessment guidelines and the *State Policy on Transfer*, the state-supported institutions track students' progress through their academic careers. As an example, Radford University's data allows the institution to focus studies on the degree to which general education courses prepare students for upper-division work in their major. Radford also can compare the success of transfer students who completed their general education requirements elsewhere with that of non-transfer students. Christopher Newport University and Thomas Nelson Community College developed a process in which the university can evaluate how well transfer students do in its courses after students transfer from the community college.

4.6 Use of assessment results

Using assessment findings for curriculum improvement is an essential element of a strong assessment program. Several of the public institutions described ways in which they had done so. When Christopher Newport University obtained writing samples of a random group of seniors about to graduate, it found that too many of these students lacked the proficiency levels

expected of college graduates. As a result, the university increased the amount of writing required for all students, by adding writing-intensive course requirements, revising the freshman English program, and developing a common final examination for its principal writing course. In the three years since Christopher Newport introduced these curricular changes, students have improved their ability to compose and summarize text, use correct sentence structure, and provide critical responses to ideas presented in text. Virginia State University also reported that, following a series of improvements in its writing program, students' writing scores improved.

In addition to providing a matrix that listed methods used to assess general education, the survey for this study asked institutions to describe how they assessed their general education programs and how they used assessment findings in planning, budgeting, and other campus-based activities. Every public four-year institution except Virginia Military Institute reported that assessment of general education had led to improvements in that program, and several institutions reported that assessment is well integrated into the ongoing activities of the campus. Radford University, for example, reported that "assessment has become part of the institutional fabric. It is increasingly incorporated into daily activities of the university community." Radford reported that assessment data had been used to make curricular changes, change course sequencing and prerequisites, develop internships, and make other changes, most of which required that assessment findings be integrated into the university's planning and budgeting processes. Other institutions also reported that assessment has been well incorporated into the planning and evaluation loop of the institution.

Improvement of general education often goes beyond courses specifically designated for that purpose. For example, at Dabney S. Lancaster Community College, when employers of business graduates said that graduates lacked sufficient communication skills, the college began offering a communication in management course. Bryant and Stratton College, during focus group sessions with employers, found that the employers placed higher value on "soft skills" such as working well with others, problem solving, and creativity with technology than it did on the "hard skills" of knowing Windows 98 and knowing medical terminology. In response, the college integrated the "soft skills" into each of its courses.

Other institutions also made a number of changes. Virginia State University, for example, assigned freshman writing courses to its senior faculty members and reallocated three new positions to mathematics. J. Sargeant Reynolds Community College created comprehensive Academic Support Centers to enable each of the three campuses to provide support to students in reading, mathematics, writing, and other areas. In response to low scores in international/global knowledge on its locally developed general education test, Mountain Empire Community College initiated a broad-based international/cultural arts program. Wytheville Community College reported on

the ways in which its assessment program is tied to the institution's master plan and its annual resource allocations. Although the changes are too numerous to mention, every public institution except Virginia Military Institute reported changes to the general education program made through using assessment findings.

As a consequence of Virginia's mandate to assess student learning, Virginia's public institutions collectively are seen as national leaders in assessment. In this area, public institutions are far ahead of their counterparts in Virginia's private sector. Multiple and often complex assessment techniques have provided valuable data for institutional decision making and resource allocations, and in several institutions, they have led to the recent changes within the general education programs.

Part Five: The process of change in general education programs

General education programs are a dynamic rather than a static aspect of the curriculum at most institutions. This part of the study will look at how these programs are administered, special funds allocated for them, the process for changing them, and the nature of changes made in recent years.

5.0 Responsibility for oversight and review

Every Virginia institution, public and private, has a mechanism for oversight and periodic review of its general education curriculum, although the allocation of responsibility differs from institution to institution. In the public institutions, the responsibility for this oversight typically rests in a committee designated for that purpose. Names vary for these committees and range from the General Education Curriculum Committee (at Clinch Valley College and Longwood College) to the General Education Council (at James Madison University) to the Core Curriculum Committee (at Virginia Tech). Some, but not all, of the committees are Faculty Senate committees designated for the purpose, and most of them have substantial faculty representation. At some institutions, the oversight responsibility is shared between the committee and academic administrators. For example, Christopher Newport University's provost shares responsibility with the committee, and Clinch Valley College's committee is chaired by its provost. Three other institutions (Mary Washington College, Norfolk State University, and Old Dominion University) reported that their chief academic officers had oversight responsibilities for the general education curriculum. Only one institution, the Virginia Community College System, reported that its governing board had the ultimate responsibility for the general education curriculum.

At private not-for-profit institutions, major oversight responsibilities also rested with the faculty and academic administrators. Seven of the 18 responding institutions specifically mentioned the chief academic officer, while the remaining institutions stated that faculty committees primarily have that duty. None stated that the governing board was responsible for the curriculum.

5.1 Funding and faculty development

Although the oversight and review responsibilities for the general education curriculum were similar in public and private not-for-profit institutions, there was a striking difference between the two types of institutions in whether funds were designated for the general education program and whether the institution had undertaken faculty development activities in support of general

education. While Christopher Newport University, Norfolk State University, and Virginia State University did not designate funding for general education, the remaining 12 public four-year institutions and Richard Bland College set aside funds for these purposes. In private institutions, however, more than half -- ten of the 18 responding institutions -- did not designate funding for general education. Similarly, all of the public institutions, but just 11 of the 18 private not-for-profit institutions, have offered faculty-development activities supporting general education. Four of the seven private for-profit institutions that participated in the survey reported that their institutions have funds set aside for general education and for related faculty development.

In relation to funding specifically for general education, James Madison reported that it budgeted $100,000 for curriculum-development projects. More importantly, over the past two years James Madison reallocated almost 50 faculty positions to meet the needs of its general education program. Other institutions did not specify the amount of funding, but reported that they did budget for faculty-development projects or first-year seminars. Virginia Commonwealth University and Virginia Tech, among others, gave specific examples of financial support and faculty development for general education. Both the College of William and Mary and Virginia Commonwealth University reported that they had allocated funds for additional faculty positions for general education, and the latter reported it also had added graduate-teaching-assistant positions. Virginia Tech sponsors Core Curriculum workshops for its faculty and disseminates curriculum handbooks for students and advisors. Each of the 23 public two-year institutions within the Virginia Community College System reported projects and activities related to faculty development for general education.

When asked specifically about faculty development in support of the general education curriculum, all of the public institutions reported that they have undertaken such support. A majority of these institutions reported that the most common types of faculty development activities were aimed at improving writing, through writing-across-the-curriculum initiatives (at Christopher Newport University, Clinch Valley College, Longwood College, and Virginia State University), writing-intensive courses (at Mary Washington College and Virginia Commonwealth University), and the widespread use of technology in the classroom. Public institutions also offer faculty development in integrating critical thinking, oral communications, collaborative mathematics, and development of knowledge, skills, and attitudes. Although faculty development at private not-for-profit institutions is not as common as it is at public institutions, when it is offered it is similar in content to that offered at the public counterparts.

5.2 Comprehensive reviews

Every public institution reported that it had conducted a comprehensive review of its general education program within the last decade. Eleven of the 15 public four-year institutions have conducted these reviews since 1994. Longwood College, the University of Virginia, and the Virginia Community College System last conducted comprehensive reviews of general education nearly a decade ago, although they have conducted more limited reviews since then. Like the public institutions, most private not-for-profit institutions have reviewed their curricula within the past decade. But while only four public institutions had not conducted at least two such reviews within the last decade, eight of the private not-for-profit institutions had not done so. The longest period since the last review was at Mary Baldwin College, which last reviewed its general education program in 1983-84. The private for-profit institutions also reported that they reviewed their general education programs, with all seven reporting that such reviews had been conducted within the past decade. Looking to the future, essentially all institutions, public and private, reported that comprehensive reviews of the general education programs were either underway or about to begin.

Conducting a comprehensive review of the general education program is a major undertaking at most institutions. The majority of institutions reported that the review process was lengthy, often difficult, and involved both faculty and administrators. Institutions reported that the review and change process took from several months to multiple years. The College of William and Mary provided a somewhat typical description of the change process, which began in 1990 and culminated in a new curriculum adopted by the faculty in 1993. William and Mary's entire academic community -- students, faculty, administrators, graduating students, and employers -- all were involved in the faculty-driven process. Although the process was lengthy, the institution developed widespread faculty support for a new general education curriculum, for which it reallocated funds and positions so that the new program could be implemented in fall 1996. Not every institution gains widespread faculty support. A vocal minority of faculty members criticized James Madison University's recent changes, which created a more structured and integrated curriculum with less student choice.

At public institutions, the two primary instigators of comprehensive reviews were academic administrators and committees. Institutions named several committees, most commonly those charged with oversight of the undergraduate curriculum in general or the general education program in particular. Neither committees nor academic leaders were primary instigators of the reviews at two public institutions. At Old Dominion University and Virginia Commonwealth University, the institution's strategic plan led directly to the review of general education, while at Virginia State University, outside forces, including SCHEV, the Southern Association of Colleges and Schools (SACS), and the National

Commission on the Accreditation of Teacher Education (NCATE), were the principal instigators. (SACS sets minimum requirements, in general education and many other areas, that institutions must meet in order to gain or keep accreditation.)

Private institutions showed similar patterns, with academic leaders and curricular or general education committees the most common initiators of past changes in general education programs. Emory and Henry College initiated its general education review in response to a SACS recommendation, and Liberty University's president was the primary instigator of that institution's last review. Private for-profit institutions reported that their central offices or academic leaders were the most influential force in initiating reviews.

When asked about the person or group responsible for initiating upcoming general education review processes, the institutions responded that the initiators of planned future reviews were the same as for past reviews. There was little difference between the responses of public and private institutions.

5.3 Motivation for change

When asked what specific issues motivated the last reviews, "broad concerns about the general education program" was the strongest motivating factor for the public four-year institutions, with all but three (Longwood College, Virginia Military Institute, and Richard Bland College) selecting this response from a list of possible motivations. Other frequently-checked responses were "a perceived incoherence in the former general education program," "a need to improve students' skills in writing and math, changes in pedagogy," "a desire to provide less choice for students" (thus resulting in a more structured curriculum), and "a desire to better prepare students for the workforce." Less frequently, institutions reported that they changed their general education curricula "to provide more interdisciplinary opportunities," "to incorporate technological skills," to address cultural diversity or global viewpoints, to respond to "changes in scholarship," or to respond to "changes in student demographics." James Madison University and Mary Washington College specifically mentioned assessment results as a stimulus for general education reviews. No public institution reported that a desire to increase student choice was a factor in the last or upcoming general education reviews.

The responses from private not-for-profit institutions were similar to those from the public institutions. Broad concerns about general education were the single most common motivating force for the last and upcoming reviews, with the need to strengthen basic skills (writing, math, etc.) as the second most common motivator. Hollins University, Marymount University, and Randolph-Macon Woman's College reported that "perceived incoherence in the curriculum" was a primary motivator for their upcoming reviews. The "need to accommodate new

pedagogical styles" also was an important motivator for upcoming reviews. Like the public institutions, the private ones did not intend to increase student choice in the general education programs.

5.4 Participation in the review and change process

When asked who was involved in the last reviews of general education, every public and private institution reported widespread faculty involvement, and all but Clinch Valley College, George Mason University, Randolph-Macon College, and Sweet Briar College reported administrative participation. About half of the public and private institutions reported that their boards were involved in the reviews, with Norfolk State University reporting that its board was a major participant in the review. Students were the next most common type of participant at both public and private institutions, with James Madison University and Virginia Tech reporting that they were major participants. Alumni and employers participated in the reviews at a few institutions, with more institutions reporting that they will involve employers in the next review. Longwood College, Virginia Tech, Bridgewater College, Eastern Mennonite University, and Marymount University reported that their boards would be involved in the next review, although they were not involved in the last one.

Committees, hearings, and retreats were the strategies reported to facilitate review of the general education curriculum at most institutions. About half of the institutions used consultants, while less than a fourth said that participation in regional or national symposia facilitated the process. James Madison University and Radford University specifically mentioned assessment as a strategy that facilitated changes in the general education program.

5.5 Nature of recent changes

Institutions were asked to describe the ways their general education programs changed during their last revisions. In its 1989-91 review, the Virginia Community College System eliminated references to specific disciplines and courses and distributed requirements across five major areas: English Composition, Humanities/Fine Arts (including foreign language), Social/Behavior sciences, Natural Sciences and Mathematics, and Wellness. The system reported that its requirements in English composition were strengthened for the applied degree and its requirements in the social sciences were increased for the transfer degree. Since its last major change, the system more specifically defined its minimum competencies for computer skills, foreign language, and wellness. Richard Bland College reported that it had increased the structure and featured less choice in its last revision.

Some reviews, like the Virginia Community College System's review of program length, produced minor changes, many of which were simply an exchange of courses that were considered to meet general education requirements between different areas. Other reviews, however, resulted in major changes and entirely new general education programs. One-third of the public four-year institutions (the College of William and Mary, James Madison University, Mary Washington College, Old Dominion University, and Virginia Commonwealth University) instituted new general education programs within the past three years. (N.B. For these institutions in particular, the reports on what courses students actually took for the 1993-97 cohort do not reflect the institutions' current general education programs.)

At the public four-year institutions, the most typical results of recent general education reforms were an increase in structure or coherence (at almost all institutions) and a decrease in student choice. Other major reforms were the development of competencies or proficiencies that are expected of students (*e.g.,* at Clinch Valley College, Longwood College, Norfolk State University, Radford University, Virginia Commonwealth University, and Virginia State University) and increased emphasis on writing (*e.g.*, at the College of William and Mary and Old Dominion University) and computer skills (*e.g.*, at the College of William and Mary, Radford University, and Virginia Military Institute). The next several paragraphs describe the changes at each public four-year institution.

In 1996, Christopher Newport University revised its curriculum to require fewer semester hours and fewer choices within a defined structure. In its last review, Clinch Valley College developed proficiencies to define clearly what students will be able to do as a result of their general education experience. It also added a few courses to those that satisfy general education requirements, and it developed and piloted a general education capstone course.

The College of William and Mary's last curriculum revision, which it implemented in 1996, resulted in a more coherent, structured, and skill-oriented curriculum. The institution increased its emphasis on computer skills, independent and small-group learning experiences, and writing and computing competencies that were to be attained in the students' majors. William and Mary made many changes, including the addition of a writing- and discussion-intensive freshman seminar that focuses on the development of critical thinking and communication skills, an upper-division learning experience, increased emphasis on oral-communication skills, and the addition of requirements in mathematics and quantitative reasoning, natural sciences, social sciences, world cultures and history, literature and history of the arts, creative and performing arts.

George Mason University reported that it expected to continue having a variety of means of satisfying the university's general education requirements. It has initiated an Honors Program In General Education and an integrated general education program within its New Century College.

James Madison University moved from a broad menu of subject areas and distribution requirements to a coherent, interdisciplinary program with significantly more structure and fewer choices. The new program has a stronger emphasis on computer literacy and basic skills such as oral and written communication and critical thinking. The goal was to develop a coherent curricular relationship among courses and to address the issues of informed and responsible citizenship.

In Longwood College's 1986-90 revision, the institution set ten general education goals and nine criteria that courses must meet in order to be included in the general education program. The institution substantially decreased the number of courses in general education and made the program more structured and intentional. The institution's overall general education goal is "mastery of a broad body of knowledge," which fits within Longwood College's overall goal of educating a "whole person." Norfolk State University reported that, in its last change, the general education program became more structured and focused on a cluster of courses that were designed to prepare the student for study at advanced levels.

As a result of Mary Washington College's most recent change, which it implemented in fall 1997, the number of courses from which students may select their general education courses was decreased. Mary Washington College adopted a two-tier approach in its new program. The first tier includes eight traditional learning goal areas. Before a course is approved as one of the choices in a particular goal area, it is reviewed against three criteria that all courses must meet in order to be termed a "general education" course. The second tier of the program involves several "across-the-curriculum" elements in fundamental skills (such as writing and speaking) and content areas (such as global awareness and diversity studies).

Old Dominion University implemented a new general education program in fall 1998 in which students will be required to complete two courses in writing and one in oral communication at the lower-division level and at least one writing-intensive course in the major. In addition to strengthening writing courses, the institution expanded science and technology requirements, added coursework designed to strengthen students' skills in critical thinking, increased its emphasis on analytical skills, writing and oral communication, and set technology competencies. It also decreased the number of choices, particularly in upper-division courses, available to students.

Radford University's recent study set clearly articulated purposes and goals for the general education program, making it possible for the institution to assess the program with greater intentionality. It also reaffirmed the importance of and its commitment to a strong general education program, introduced

pedagogical changes that created more active learning environments, and made greater use of technology.

Following its 1989-91 review, the College of Arts and Sciences at the University of Virginia added a non-Western perspective requirement and a historical-studies requirement. It also designated subareas within the humanities, while requiring that students complete study in at least two different subareas. In its last revision, Virginia Commonwealth University developed its first university-wide general education program, which it implemented in fall 1997. Before that time, each school in the university set its own general education requirements. Now, every school within the university works within the same program and with the same learning objectives. Since 1995, Virginia Military Institute has replaced its western civilization requirement with one in world civilization, added word processing and spreadsheet training to freshman chemistry labs, and added a requirement to take two upper-division writing-intensive courses.

Virginia Tech's last review resulted in a more structured general education curriculum, although it also added more courses to those that meet its general education goals. The new curriculum requires students to have exposure to international issues and global perspectives. Having choice within the structure and guidance in making those choices are things that Virginia Tech reports as being hallmarks of its general education program.

During its last review, Virginia State University did not make significant changes, but focused on clarifying its expected knowledge, skills, and attitudes. The university also eliminated its freshman-orientation courses. In addition, Virginia State has raised its admission standards over the past several years.

Overall, Virginia's public institutions changed their general education programs so that they are more structured and have less student choice. In most cases, institutions made these changes over several years and several implemented them after the cohort of students for which we reported course-taking patterns began or completed their studies. The general education programs in Virginia's institutions are stronger than they were at the beginning of this decade, and the changes that institutions recently implemented will make the majority of these programs stronger in the next century.

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[i] Commission on Colleges of the Southern Association of Colleges and Schools, "Condition Ten" of *Conditions of Eligibility* (Atlanta, GA: Jan., 1998), p.4.

[ii] See, for example, the National Association of Scholars' study *Dissolution of General Education: 1914-1993* (Princeton, NJ: Spring, 1996), which was preceded by two earlier and highly influential studies, the National Endowment for the Humanities' *50 Hours: A Core Curriculum for College Students* (Washington, D.C.: October, 1989) and the Association of American Colleges' *Integrity in the College Curriculum* (Washington, DC: February, 1985).

[iii] Virginia Association of Scholars, *The Troubling State of General Education: A Study of Six Virginia Public Colleges and Universities* (Fairfax, VA: 1998), p. xii.

[iv] Definition modified from Thomas Angelo, "Reassessing (and redefining) assessment," *AAHE Bulletin*, vol. 48, no. 3 (1995), p 7.
[v] *E.g.*, the American Academy for Liberal Education, the American Association for Higher Education, and the Association for General and Liberal Studies.
[vi] American Association for Higher Education, Washington, D.C., December 1992, later adopted by SCHEV.

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