

General Education Maps and Markers

*Designing Meaningful Pathways
to Student Achievement*



GEMs

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to Student Achievement*



*Association
of American
Colleges and
Universities*

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Foreword

By Carol Geary Schneider, president of the Association of American Colleges and Universities

As president of the Association of American Colleges and Universities (AAC&U), I am very pleased to share with you this important publication on transformative change in general education, part of a project known as General Education Maps and Markers (GEMs).

General education is the nation's largest educational program—the part of the curriculum deliberately designed to prepare all students for life, work, and citizenship by fostering their knowledge of the wider world (science, cultures, histories, societies, values) and by preparing them to think analytically and learn collaboratively. General education is viewed, in the United States and abroad, as an American hallmark—a key to creativity in the economy as well as to participatory citizenship. When done well, it both expresses and guides the US commitment to broad and multidisciplinary education—liberal education—that other countries now are seeking to import.

General education, invented to help college students gain the knowledge and collaborative capacities they need to navigate a complex world, is today and should remain an essential part of a high-quality college education.

And yet, in practice, general education programs too often underperform. When general education is organized mainly as an à la carte menu of disconnected survey courses, and when it is taught in huge lectures that emphasize content delivery over critical inquiry while neglecting students' own active participation in their learning, it falls far short of its intended horizon-expanding purposes. Instead of developing big-picture understanding of the wider world through a purposeful immersion in the liberal arts and sciences, students too often find that their broad or general learning is fragmented, incoherent, and frustrating. Advising practices show all too clearly the troubled state of general education: both advisors and other students frequently urge learners to “get their gen eds out of the way.” This is hardly an invitation to powerful learning.

The principles and guidelines presented in these pages directly address this long-standing disconnect between the crucial goals American colleges and universities have set for general education and the outdated practices that too often stand in the way. They invite the transformative redesign of general education that higher education needs and that our students deserve.

Written for faculty members, academic leaders, and policy makers, *General Education Maps and Markers: Designing Meaningful Pathways to Student Achievement* provides clear maps and markers to ensure that general education fosters Essential Learning Outcomes or proficiencies, enriches students' learning in the major, and prepares college students to successfully tackle the kinds of complex problems they will inevitably confront in work, civil society, and their own lives.

The vision presented in these pages repositions general education, in sum, not as a series of irrelevant barriers to student progress, but rather as a cumulative and integrative context for students' most important accomplishments in college—accomplishments that, by design, prompt students to integrate their broad learning in the liberal arts and sciences with the specialized learning of their major fields.

Making General Education a Guided Pathway to Integrative and Empowering Learning

The twenty-first-century plan for general education outlined in these pages will help colleges and universities redesign general education as a set of guided learning pathways—within and across institutions—that purposefully build students’ preparation for citizenship, for an innovation-fueled economy, and for their own lives. Focused intensely on teaching students to apply their learning to significant and unscripted problems, *General Education Maps and Markers* organizes general education as a catalyst for integrative and applied learning from the first to the final year of college, and for deliberately connecting students’ studies to the complexities of the world beyond college.

General Education Maps and Markers also provides guidelines for the competency-based learning movement. Keyed to Lumina Foundation’s Degree Qualifications Profile (DQP), which describes college degrees in terms of proficiencies every student should acquire, *General Education Maps and Markers* applies the DQP directly to the purpose and design of general education programs and their connections to the major or specialized learning programs. It is intended to serve returning adult learners as well as traditional-age learners.

General Education Maps and Markers is intended both for public and private postsecondary institutions and for the numerous state systems whose policies largely control what counts and what does not count in general education in public higher education and, increasingly, in transfer agreements.

This publication should be seen as a call to vigorous action by institutions, state systems, and accreditors to rewrite their general education requirements—not as a set of course categories to be completed in the first two years, but rather as a set of guidelines for helping students achieve Essential Learning Outcomes and produce meaningful educational projects, from first to final year of college, wherever the students enroll, and wherever they ultimately graduate.

General Education Maps and Markers: Designing Meaningful Pathways to Student Achievement should be read in tandem with *General Education Transformed: How We Can, Why We Must*, a forthcoming GEMs publication authored by Paul L. Gaston. Together, they directly challenge the outdated practice of tracking students’ educational progress or “success” exclusively in terms of the credit hours students accumulate—often quite chaotically—in an approved set of course categories. Recognizing that America’s future depends directly on the development of trained intelligence and social imagination, *General Education Maps and Markers* addresses the proficiencies and experiences students should acquire across their educational pathways from school to college.

General Education Maps and Markers also recognizes the value and power of experiential and applied learning in preparing students for a complex world. Whether students gain their “can-do” proficiencies in the workplace, in the cocurriculum, in research projects, or in their communities, the framework presented in these pages insists that all students need and deserve multiple experiences of applying their learning to real-world challenges and meaningful responsibilities. By using this framework, we can make general education both more effective and less wasteful of time and dollars.

General Education Maps and Markers: Drawn from and for the Higher Education Community

This publication is indebted to the many AAC&U member institutions—large and small, broad access and selective, private and public, two-year and four-year—whose leaders collectively have pioneered the approach to general education outlined in these pages. Working with their own students and faculty, and working in tandem with AAC&U, these trailblazing institutions have identified

for themselves the chronic problems of fragmentation and murky purpose that have made the US investment in broad and horizon-expanding general learning less effective educationally than our students need and deserve. They responded by redesigning their general education pathways.

The GEMs approach to general education is richly informed by the examples of these creative colleges, universities, and community colleges. Many leaders from these institutions influenced the GEMs recommendations directly by participating in one of the GEMs working groups acknowledged on pages x–xi. Others will be recognized in forthcoming GEMs working papers on recommended best practices.

Collectively, these institutions have already field-tested many of the ideas outlined in these pages: a clear focus on Essential Learning Outcomes, from first to final year; strong connections between general and specialized learning; a pervasive commitment to civic and global as well as work-related learning; student preparation for integrative and culminating projects; and the inventive use of both digital and equity strategies to better support high-quality student accomplishment. Thanks to support from the Bill & Melinda Gates Foundation for the design phase of GEMs, AAC&U has been able to tap the experience of a truly diverse array of institutions and scholars in developing this reinvention of the design and practice of general education.

GEMs and the LEAP Challenge

Going forward, GEMs reforms will be the centerpiece of a family of projects AAC&U collectively terms “the LEAP Challenge.” The LEAP Challenge is the next frontier in AAC&U’s ongoing educational change initiative, Liberal Education and America’s Promise, or LEAP.

Developed in the context of AAC&U’s Centennial Year, the LEAP Challenge signals AAC&U’s “second century” determination to make liberal education—including general education—more purposeful, more equitably inclusive, more digitally inventive, and more transparently engaged with the world’s most pressing issues—global, societal, civic, ethical, and economic. (To learn more about the entire LEAP framework for student learning in college, see pages 26–28.)

Focusing intensively on the larger meanings of “student success,” the LEAP Challenge is designed to ensure that LEAP-framed reforms, including the redesign of general education, work at peak for all college students, whatever their backgrounds, educational goals, and intended careers. With major support from philanthropy, and in partnership with a broad array of two- and four-year institutions, the LEAP Challenge will advance

- guided institutional and inter-institutional pathways to create equitable access to excellence for all students, with a special focus on underserved students;
- purposeful, integrative, and proficiency-framed redesigns of general education;
- proficiency-fostering approaches to digital learning;
- students’ active engagement in producing their own projects—termed “Signature Work”—that integrate knowledge, essential proficiencies, and evidence-based reasoning related to a significant problem or question;
- the use of faculty-designed VALUE rubrics for widely endorsed proficiencies to assess student accomplishment, including Signature Work projects;
- a strong focus on diversity, equity, and inclusive excellence across the curriculum, including in high-opportunity fields such as science, technology, engineering, and mathematics.

Across all these initiatives, including GEMs, AAC&U will continue to work with its members and with policy leaders to affirm and renew civic, global, and intercultural learning as an integral part of college study, and to connect students' specific interests to public questions and the responsibilities of democratic citizenship.

From Breadth, Depth, and Credit Hours to GEMs Pathways and Students' Signature Work

The LEAP Challenge described above is AAC&U's Centennial effort to ensure that LEAP reforms work well for today's students—fostering needed proficiencies and preparing students for complexity, diversity, and change. Informed by the important evidence that engaged or “high-impact” practices foster both deeper learning and increased persistence, the LEAP Challenge calls for all college students, not just the most fortunate college students, to integrate and apply their learning to complex problems and projects that are important to the student and to society. The projects may address contemporary problems—such as literacy or health or energy—or they may address enduring questions—such as freedom, integrity, human dignity, or justice.

Whatever the topic, such deliberately integrative projects become an opportunity for students to take the lead, with faculty guidance, in determining the question, developing the analytic and creative strategy, and producing work that represents the students' own integration of knowledge, skill, evidence-based reasoning, and personal or social responsibility.

Students' work on complex projects in college will prepare them to work on similar challenges in their careers, their communities, and their own lives. AAC&U calls the resulting achievement students' Signature Work.

The GEMs learning pathways described in these pages—rich in proficiency- and project-based integrative learning—are intended to help students practice, prepare for, and accomplish meaningful Signature Work.

In calling for students to develop proficiencies through integrative learning projects, GEMs also articulates—to everyone's benefit—a contemporary purpose for general education that breaks free at last of the old “breadth-depth” model that was first introduced for general education some one hundred years ago.

The “breadth-depth” curricular division of labor—taken for granted in virtually all policy approaches to student success and transfer articulation—in fact originated in the age of the assembly line. Tattered and bedraggled, it neither suits nor serves today's diverse and swirling students who need a very different approach—personalized, customized, results oriented—to make the most of their college studies. GEMs will help higher education reinvent this outdated and underperforming design for college learning, general education, and liberal education.

While broad and specialized learning will certainly remain features of college for today's students, GEMs affirms that the ultimate goal for both breadth and depth is integrative and applied learning—made visible in students' research, practicums, service learning, creative work, and e-portfolios. In preparing students to integrate and apply their learning in projects and Signature Work, general education will complement and contextualize specialized learning. Core intellectual skills will be practiced and integrated continuously—and at increasingly more challenging levels—across general education and the major. Proficiencies and projects will be central to both courses and programs, not afterthoughts to content and credit hours. Projects and practicums will provide

opportunities for students to practice these essential integrations of knowledge, skill, and applications and will show how well they are achieving the proficiencies important to their lives beyond college.

Signature Work provides a practical context for fostering students' integrative learning, from first to final year. By introducing the idea of Signature Work the day students apply to college, and by providing a kind of dress rehearsal for integrative student projects no later than the second year, colleges, universities, and community colleges can instantiate their expectation that learning is supposed to be integrative and cumulative, not fragmented and incoherent. They can ensure that students' general education is in fact empowering and horizon expanding, the kind of learning that makes more of students' futures.

AAC&U's Next Era of Work on LEAP and GEMs

Going forward, AAC&U will promote the GEMs approach to general and liberal education across the entirety of its work—its ongoing programs of summer institutes and working conferences, and its extensive family of LEAP-framed grant-funded projects.

GEMs premises also will set the standard to ensure that the digital revolution is used to facilitate students' inquiry-based learning and projects, not to further immerse students in content and concepts they never learn how to actually use.

And AAC&U will continue to press policy leaders—state, accreditation, philanthropic, and federal—to focus on the most empowering forms of learning and make quality of learning, not ancillary metrics, the guiding compass for quality and equity as this global century progresses.

In 2015, in the context of its Centennial Year, AAC&U will select a set of institutions—public and private, two-year and four-year—that want to remap their own curricular pathways to ensure that all their students are ready to apply their broad and specialized learning to Signature Work projects of many kinds.

These LEAP Challenge institutions will become partners with AAC&U both in advancing the broad goals of a twenty-first-century liberal education and in promoting the equity-minded and digitally creative GEMs designs for general education that will play an integral role in helping students achieve those goals (for more on the LEAP goals for liberal education, see pages 26–28). They will be leaders in general education reform, and, because of their integrative approach to general education, in the renewal of liberal education as well.

Welcome to AAC&U's second century. We are leaning forward and, in partnership with you, creating a far-reaching LEAP vision and practice whose ultimate purpose is to make excellence—once and for all—inclusive. GEMs pathways for general education are central to that vision, and to all students' achievement of the vibrant education they need and deserve.

We invite your participation in GEMs reforms as AAC&U marks its Centennial by embracing the LEAP Challenge.

Acknowledgments

General Education Maps and Markers: Designing Meaningful Pathways to Student Achievement, developed through AAC&U's GEMs initiative, is one of several publications that are being released in the context of AAC&U's Centennial Year, 2015. AAC&U is grateful to the Bill & Melinda Gates Foundation for its generous support of the first phase of the GEMs initiative and of AAC&U's Centennial planning for a second century of educational leadership for quality and inclusive excellence.

AAC&U also expresses its appreciation to Lumina Foundation, The Arthur Vining Davis Foundations, The Charles Engelhard Foundation, The Kresge Foundation, The Teagle Foundation, The Andrew W. Mellon Foundation, and to numerous individual donors whose collective support will help AAC&U move GEMs from the design principles outlined in these pages to vigorous educational change efforts across the nation's college, university, and community college campuses, and in state systems as well. For more on the next phase of GEMs, see the last section of the foreword.

We also thank Wilson Peden for his expert editorial assistance, Shelley Johnson Carey and Michele Stinson for shepherding this and other GEMs publications through the design and production process, and Ann Ferren for her advice and assistance as documentarian of the GEMs project. And finally, AAC&U thanks the members of the three GEMs working groups and the GEMs quality assurance group, who contributed greatly to the development of this document. The principles and guidelines are largely derived from their experience and experimentation and reflect and gather their ideas about general education. We appreciate their time, effort, and energy and their many, many good suggestions.

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**President Fong passed away in September 2014.*

“The time is right and the need is urgent to provide a horizon-expanding education to all who participate in our educational system—in school, in community college and career-technical institutions, and in four-year colleges and universities, public and private. Access to educational excellence is the equity challenge of our time.”

Board of Directors of the Association of American Colleges and Universities

Introduction to General Education Maps and Markers

By David C. Paris, vice president for integrative liberal learning and the global commons and chair of the General Education Maps and Markers Design Working Group, Association of American Colleges and Universities

The Association of American Colleges and Universities (AAC&U) is actively pursuing a mission-level focus on liberal education and inclusive excellence through Liberal Education and America's Promise (LEAP), a national advocacy, campus action, and research initiative that champions the importance of a twenty-first-century liberal education—for individuals and for a nation dependent on economic creativity and democratic vitality.

LEAP responds to the changing demands of the twenty-first century—demands for more college-educated workers and more engaged and informed citizens. The LEAP vision for learning applies to all forms of postsecondary study, including career, technical, and professional education as well as the

liberal arts and sciences, in all learning environments (face-to-face, online, or blended). Through LEAP, AAC&U makes the case that all students, especially new majority students—first-generation college students and students from historically underserved populations—should receive a truly liberal education through which they develop the twenty-first-century knowledge and skills essential for work, life, and responsible citizenship.

In order to meet the needs of our students and our society, AAC&U has launched a major national project, General Education Maps and Markers (GEMs). Through this LEAP project, AAC&U seeks to provide a broad-based, comprehensive framework based on five principles (see facing page) and related guidelines for reform of undergraduate education, beginning with general education.

In partnership with leaders from multiple institutions and with support from higher education organizations and other supporters and stakeholders, GEMs will help institutional leaders and educators redesign general education curricula and programs intentionally and systematically to help all students see the point and purpose of a liberal education and empower students to develop essential proficiencies that will help them achieve their aims, succeed in their chosen professions, and enrich their lives.

GEMs seeks to reverse the trend toward a two-tiered system of higher education that offers a horizon-expanding education to some and limited learning to others. The GEMs general education reforms seek to empower all students to improve and enhance their lives through an engaged liberal education rich in meaningful problem-solving and integrative cross-disciplinary learning.

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THE GEMs DESIGN PRINCIPLES FOR GENERAL EDUCATION

PROFICIENCY

Colleges and universities should provide clear statements of desired learning outcomes for all students. Similarly, general education, in all institutional and alternative settings, should provide programs, curricula, and experiences that lead to the development of demonstrable, portable proficiencies aligned to widely valued areas of twenty-first-century knowledge and skill. Students should achieve and demonstrate progressively higher levels of proficiency through problem-centered work on significant issues relevant to their interests and aims.

AGENCY AND SELF-DIRECTION

General education should play a critical role in helping *all* students understand, pursue, and develop the proficiencies needed for work, life, and responsible citizenship. Students should be active participants in creating an educational plan in which they identify and produce high-quality work on significant questions relevant to their interests and aims. Undergraduate education should enable students to understand the intellectual and personal capacities they are developing that will help them achieve their educational and professional goals, enrich their lives, and act in principled and constructive ways, both as individuals and in their roles in society.

INTEGRATIVE LEARNING AND PROBLEM-BASED INQUIRY

Students should develop and demonstrate proficiency through a combination and integration of curricular, cocurricular, and community-based learning, as well as prior learning experiences, including in institutions and in local, global, and virtual communities and networks. Students should demonstrate proficiencies through inquiry into unscripted questions and problems that are relevant to their interests and aims and where a full understanding of the problem requires insights from multiple areas of study.

EQUITY

General education programs should be equity-minded (see page 9) in design and implementation. This requires a cognitive shift in the ways faculty and administrators understand and address inequalities in outcomes among students of color, students with disabilities, low-income and first-generation students, returning adult students, veterans, and others. General education programs should advance practices and policies that are aimed at achieving the full spectrum of learning outcomes for all students regardless of their backgrounds.

TRANSPARENCY AND ASSESSMENT

Students, faculty members, and other stakeholders should understand what proficiencies are being developed in any general education program, course, or activity, and how these proficiencies can be demonstrated at key milestones in students' progress toward the degree. Students and institutions should be able to point to students' work, especially their "Signature Work" in problem- and project-based inquiry, as demonstrations of proficiency worthy of credit across institutional settings and as a body of work associated with earning the degree.

1. Why Are GEMs Principles and Guidelines Needed?

Too few students are leaving colleges and universities with the skills, knowledge, and dispositions that prepare them for work, life, and responsible citizenship. This is especially true for “new majority” students from traditionally underserved populations whose success and flourishing are critical for our shared future economic and civic well-being.

Our country needs more postsecondary graduates with high-quality degrees and certificates. Currently our higher education system is not meeting these needs.

Too few students are graduating from college, and too many students who do graduate are underprepared, lacking the proficiencies needed for twenty-first-century work and citizenship (Gaston, forthcoming). Among students who begin their education at community colleges with the intent of earning a four-year degree, only one in seven students—and fewer than one in ten Latino or African American students—have completed the degree after six years (Hillman et al. 2014). For students who do graduate, there is “abundant evidence that too many students are falling short” in terms of learning gains and outcomes (Finley 2012, vii; see also Bok 2006).

Worse, these failures fall hardest on traditionally underserved groups—minorities, first-generation and returning students, and those from lower-income groups. The nation’s promise of genuine educational opportunity and equitable results has yet to be met. As Witham et al. (2015) note, “despite years of increasing diversity in overall postsecondary enrollment, educational opportunity in the United States—and the economic and social benefits it affords—remains markedly stratified along racial, ethnic, and socioeconomic lines” (8). Students from low-income families and communities of color are less likely to go to college, less likely to graduate, and are more typically “tracked toward less-selective colleges and universities, where they are more likely to need remedial instruction... and less likely to be offered rigorous and engaging learning experiences that will help them fulfill their aspirations” (Witham et al. 2015, 12-13).

Providing all students with a rigorous liberal education will promote economic competitiveness, democratic vitality, and personal development.

To be economically competitive, we will need more individuals with a demonstrated capacity to think critically, communicate clearly, and solve difficult problems (Board 2010). For the individual, study after study suggests that achieving the degree is essential to fully participating and prospering in an ever-changing economy. Employer surveys indicate that students

Defining Liberal Education and General Education

Liberal Education: A course of study designed to prepare students for complexity, diversity, and change. Best accomplished through the alignment of both broad or general education and a major or specialization, a liberal education helps students develop broad knowledge of science, cultures, history, and society, as well as knowledge and skills important in their chosen specializations. Liberal education also emphasizes the development of proficiencies that span all fields of study, including social and ethical responsibility, strong intellectual and practical skills (e.g., critical thinking, evidence-based reasoning, communication, and problem solving), as well as the demonstrated ability to apply knowledge and skills to complex problems and real-world settings.

General Education: Refers to the part of a liberal education shared by all students. Typically grounded in the humanities, sciences, social sciences, and arts, general education provides a platform for fostering proficiencies that span all fields of study (e.g., social and ethical responsibility, critical thinking, evidence-based reasoning, communication, and problem solving) while also providing opportunities for hands-on experience with complex questions and problems. By facilitating students’ exploration of issues and questions that bridge multiple fields of study, general education helps students build the broad and integrative knowledge they need for careers, while also preparing them directly for questions and issues they will confront as citizens in a globally engaged democracy.

are best prepared by an engaged liberal education that includes and integrates both broad-based knowledge and skills and specific skills and knowledge in a major or field of study (Hart Research Associates 2013).

Equally important, a liberal education is essential for the development and empowerment of students as citizen leaders and in their personal lives. We face complex civic and global problems that demand a citizenry capable of sorting information, doing analysis, and taking action to solve complex problems; or as the Commission on the Humanities and Social Sciences puts it in *The Heart of the Matter*, “our need for a broadly literate population is more urgent than ever.... As a nation, we need to provide an educational foundation for our future stability and prosperity—drawing on all areas of knowledge” (2013, 18).

At its best, a liberal education broadens students’ perspectives and engages them in problem-centered inquiry about pressing and perennial issues. By bringing students into communities where they learn from those whose experiences and views are different from their own, it also builds important capacities we need to succeed as a diverse and collaborative democracy.

To meet our society’s and our students’ needs, colleges and universities should adopt a broad-based, comprehensive reform of undergraduate education, beginning with general education. This reform in support of a new vision of higher education must be a collaborative and cooperative effort across all parts of higher education.

Unfortunately, too few students are benefitting from the kind of engaged liberal education that best prepares graduates both for economic opportunity and for lives in a complex world. The program and experience that touches almost all students, general education, has failed to contribute as it should to students’ achievement of a sound liberal education. The GEMs initiative addresses this systemic weakness in US higher education.

The current common approach to general education, a menu-driven, check-off system mainly aimed at breadth of content coverage prior to and separate from in-depth study in a major, is inadequate to develop the skills and capacities students need and society values. The menu-driven approach to general education too often results in uncoordinated coursework that does not directly address students’ interests and needs, does very little to develop proficiencies necessary either for work or for citizenship, and is unclear about results. This problem is serious enough at individual institutions, and it is compounded as many students now attend more than one institution and have to deal with differing requirements and programmatic goals and designs. As a result, “most students in most institutions of higher learning experience general education programs ill-designed to accomplish their stated purposes and ill-suited to ensure the wide range of learning outcomes that define degrees” (Gaston, forthcoming). The haphazard character of this kind of general education makes it difficult for students, especially as they “swirl” between and among institutions, even to see, let alone reap, the learning benefits higher education should offer.

Because it is the nation’s largest educational program, involving virtually all degree-seeking students, general education provides the site and the opportunity to provide more equitably the kind of undergraduate education—a liberal and opportunity-expanding education—that both individuals and society need. The GEMs initiative provides a proficiency-based, portable approach to general education that is designed to help all students develop mastery of essential skills, knowledge, and

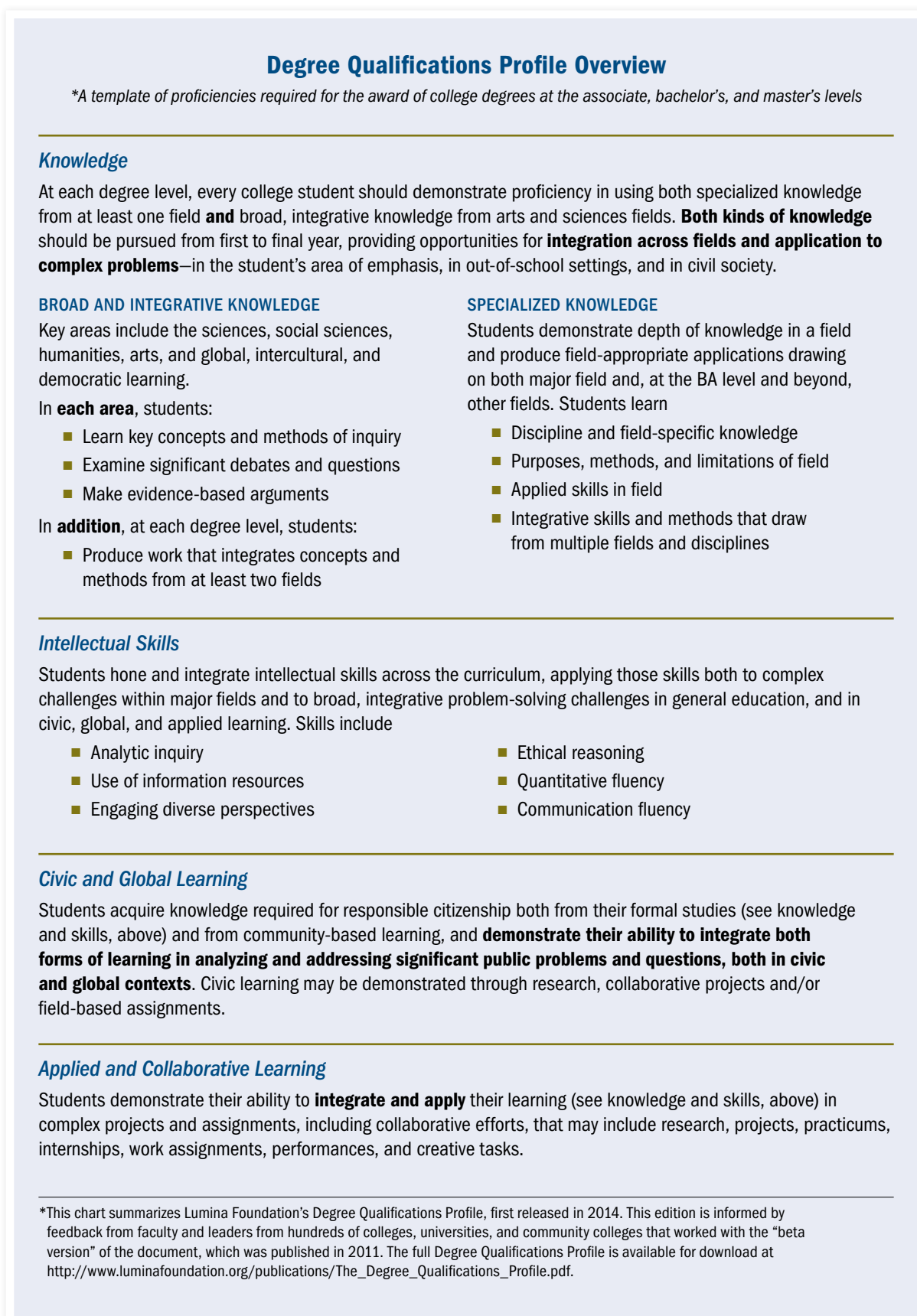
capacities that are relevant to their lives, motivations, and goals. Specifically, GEMs will help higher education develop programs for general education that focus on core proficiencies, intentional educational pathways within and across institutions, and students' engagement in work that allows assessment of their demonstrated accomplishments in inquiry- and problem-based learning. GEMs will strengthen and integrate students' broad learning across the liberal arts and sciences by connecting general education both to big questions in society and to students' major fields.

GEMs is designed to elaborate and implement the approach to general education outlined in the Degree Qualifications Profile (DQP) (Adelman et al. 2014). The DQP affirms that general education should extend from first to final year and should both help students place their specialized learning in a larger context and also help students work on the kinds of complex, multidimensional questions—in both science and society—that they will inevitably encounter as citizens (see fig. 1, page 8). GEMs seeks, in other words, to help students reap the full benefits of an education across multiple areas of study by engaging students in questions and problems that extend beyond any single discipline or academic field, connecting their broad academic studies with societal contexts, questions, and challenges.

Building from AAC&U's LEAP Essential Learning Outcomes (National Leadership Council 2007), the DQP provides a national framework for desired student learning outcomes that can be applied to general education within and across institutional settings, regardless of whether the learning environment is face-to-face, online, or a combination of the two. As students develop a plan of study, it is crucial that their prior academic and other relevant work and experiences be portable and creditworthy, and that it be clear to students how to continue to demonstrate their achievements and make progress toward completion. Similarly, the GEMs Principles and Guidelines provide criteria to assist institutions in developing curricula and programs that will help students develop crucial, lasting capacities or proficiencies wherever they begin their studies and wherever they complete them (Board 2008).

The GEMs Principles and Guidelines are designed to help colleges and universities see themselves as part of a larger, shared, national endeavor promoting students' progress wherever and whenever they enter or continue the educational process and in diverse modes of instruction.

FIGURE 1. The Degree Qualifications Profile Overview



2. The GEMs Vision

The GEMs Design Principles and Guidelines suggest a new approach to designing and evaluating general education programs, curricula, and teaching methods. GEMs builds from evidence that new majority students benefit from guided educational pathways that provide both purpose and strong support for students' progress and achievement (Jenkins and Cho 2014). Taken together, these principles and guidelines will help educators develop sound programs of general education that continue throughout a student's experience, are progressively more challenging, and include integrative and cross-disciplinary in-depth study.

A well-designed general education program should help students develop their own understanding of the proficiencies they will aim to achieve and their own plan for their education. Instead of students being presented with a set of requirements for “breadth” to be met by taking uncoordinated courses, students should be encouraged and supported in developing their own cross-disciplinary plan and path for their education that reflects their strengths, goals, and interests. That plan and path may involve working with several institutions and demonstrating proficiency in a variety of ways.

The general education program should clarify for students the learning outcomes they will be seeking and how they can achieve them. As students proceed, whether at the initial institution or at a transfer institution, they should understand clearly how coursework and other experiences lead to the development of key proficiencies that help them achieve their aims and goals. Student success is more likely to be achieved through a coherent program of study that integrates academic, cocurricular, and community work and involves clear and coherent educational pathways and meaningful problem-based inquiry and analysis.

To help students achieve these goals, colleges and universities need to be fully committed to equity and transparency. Intentional and empowering general education should be accessible to all students equitably regardless of background. This requires that institutions adopt broad-scale changes to become *equity-minded*,¹ challenging the current inequities not only in access to institutions, programs of study, and/or participation in high-impact educational practices, but also in identifying and dismantling entrenched policies and practices that may disenfranchise underserved students and hinder the achievement of important outcomes. Colleges and universities need to ensure that the results of students' experiences are

Defining Proficiency

“**Proficiency** designates the knowledge, understanding and skill that satisfy the levels of mastery sufficient to justify the award of an academic degree. The DQP uses the term ‘proficiency’ rather than ‘competency’ because the DQP focuses on the degree as a whole and the continuum of learning across increasingly higher levels of study. The term ‘competence’ describes formative attainment goals within specific learning experiences (e.g., in courses) along the path to degree-qualifying proficiencies.” (Adelman et al. 2014, 8)

Defining Equity-Minded

“Being **equity-minded** involves taking stock of the contradictions between the ideals of democratic education and the social, institutional, and individual practices that contribute to persistent inequities in college outcomes among different racial and ethnic groups and socioeconomic classes. Equity-minded individuals are aware of the sociohistorical context of exclusionary practices and racism in higher education and the effect of power asymmetries on opportunities and outcomes for students of color and students of low socioeconomic status. Being equity-minded thus involves being conscious of the ways that higher education—through its practices, policies, expectations, and unspoken rules—places responsibility for student success on the very groups that have experienced marginalization, rather than on the individuals and institutions whose responsibility it is to remedy that marginalization.” (Witham et al. 2015, 2)

¹ The term “equity-minded” was originally developed by Estela Bensimon of the Center for Urban Education at the University of Southern California; see Bensimon, “The Underestimated Significance of Practitioner Knowledge in the Scholarship of Student Success,” *Review of Higher Education* 30, no. 4 (2007): 441–69.

clearly documented and assessed in ways that reflect what students have actually done and help improve curricular programs (Rhodes and Finley 2013). A student's "body of work"—represented in an e-portfolio or other transcript supplement, rather than through transcript listings of courses and grades alone—should demonstrate what the student has experienced and achieved.

That body of work will be necessarily and rightly rooted in integrative and problem-based studies across the humanities, social sciences, arts, and sciences—the big-picture knowledge acquired through study in the arts and sciences that is crucial for success in the twenty-first century (AAC&U 2013, 5). General education should pull together the desirable qualities promoted through broad study in the liberal arts and sciences—to follow logic and evidence where it leads in science and elsewhere; to sympathetically imagine the views of others; to understand the problems of interpretation and language; to develop historical perspective; to understand social, economic, and political institutions; and to see core questions about values in the choices we face. To quote *The Heart of the Matter* again, "A fully balanced curriculum—including the humanities, social sciences, and natural sciences—provides opportunities for integrative thinking and imagination, for creativity and discovery, and for good citizenship" (Commission on the Humanities and Social Sciences 2013, 13).

This new approach to general education is a dramatic departure from current practice, with implications both for institutional programs and practices and for higher education as a whole (see fig. 2). GEMs directly challenges both the fragmented and incoherent general education often found

on traditional campuses and also the newer stand-alone, "do-it-alone" courses that some entities are now promoting as alternative routes to general education credit. The principles and guidelines below describe the key aspects of general education programs that can empower all students to develop their capacities through meaningful problem-based work as part of an intentional, coherent, engaging, and integrated educational experience.

Most important, this vision involves colleges and universities seeing themselves as part of a national enterprise that self-consciously and cooperatively creates opportunities for students to develop agency and self-direction, and to persist and succeed through problem-based work demonstrating proficiencies. An institution's programs, curricula, and practices should be evaluated on whether they help students reach learning goals even as students cross institutional settings and move through a variety of experiences and projects. At the core of the GEMs vision is the notion that each student will work progressively and intentionally on projects and produce materials that represent what they have achieved, their best Signature Work (Board 2008, AAC&U 2015).

Defining Signature Work

In **Signature Work**, a student uses his or her cumulative learning to pursue a significant project related to a problem she or he defines. In the work conducted throughout at least one semester, the student takes the lead and produces work that expresses insights and learning gained from the inquiry and demonstrates the skills and knowledge she or he acquires. Faculty and mentors provide support and guidance.

Signature Work might be pursued in a capstone course or in research conducted across thematically linked courses, or in another field-based activity or internship. It might include practicums, community service, or other experiential learning. It always will include substantial writing, multiple kinds of reflection on learning, and visible results. Many students choose to use e-portfolios to display their Signature Work products and outcomes. (AAC&U 2015)

FIGURE 2. General Education Transformed through GEMs

DIMENSION	FROM	TO
Prioritizing quality learning	Faculty teaching	Student learning
Documenting achievement	Courses, credits, and transcript	Documented proficiencies demonstrated in e-portfolios
Building effective general education pathways	Distribution requirements in first two years	Four-year path integrated with major
Focusing teaching strategies and improvements	Discrete courses, content “coverage” and comprehension	Students explore complex problem across multiple courses
Locating spheres of work	Single institution assumed	Often multiple institutions
Advising for student success	Occasional, mostly course scheduling	Sustained, focused on student priorities and progress toward expected proficiencies and project-based work
Increasing student awareness and motivation	Limited, uneven, instrumental	Students know what they are expected to learn and plan early for their Signature Work
Closing equity divides	Deep and persistent inequities reinforced by standard curricula and structures	To ensure equity, curricula and structures respond to students’ different backgrounds and strengths; learning plans are personalized
Expanding high-impact practices²	Optional, occasional	Required, sustained, including in all general education pathways
Deploying technology	Unsystematic, idiosyncratic; focused on stand-alone courses rather than overall learning goals	Strategic, well aligned with curricular outcomes and student goals; also used to help students with needed areas of improvement

Implementing GEMs requires a clear understanding of the students higher education serves, the problems students and institutions face, and the tools and resources needed to respond effectively to them.

The case for developing a proficiency-based, equitable, and digitally informed approach to general education is provided in recent and forthcoming GEMs publications addressing the equity imperative, the VALUE assessment breakthrough, the need for general education transformation, and digital opportunities to support liberal education. These publications provide support for and concrete examples of the GEMs Principles and Guidelines. There are many good examples of integrated, problem-based general education programs and strategies for equity-minded practices, but, as yet, they represent the exception rather than the norm in higher education.

It also is critical to note two factors essential to understanding and implementing these principles and guidelines. The first factor is the digital revolution. “Technology is transforming everything and has changed the world into a learning ecosystem that provides opportunity for equity, connectivity, and

² For more high-impact practices, see page 26.

change,” and for a general education that is “attentive to participatory learning, knowledge networks, blurred boundaries between formal and informal learning, and communities of practice and action,” according to an unpublished internal report from the GEMs Digital Working Group, whose members are investigating ways in which digital innovations can support and enhance student learning. The power of technology comes from its capacity to make learning processes visible, enable predictive and explanatory models, personalize instruction, and create the opportunity for integrative assessment that empowers learners and faculty. The challenge is not only to develop this capacity, but to do so in ways that serve all students, not just those in well-resourced institutions. Digital developments not only provide tools that enable students and faculty to do more than they can do alone as part of a learning ecosystem, but also are essential elements in achieving high-quality general education learning outcomes at scale, equitably, for all students.

Second, as powerful as digital environments and tools are, the full development of student capacities requires the involvement of knowledgeable faculty as guides and mentors providing direction and giving feedback as students explore challenging fields of study, develop skills, and work on significant problems. The appropriate application of digital tools will allow faculty to spend more time mentoring students working on complex, unstructured problems and teaching them how to develop and use evidence in forming conclusions. The digital revolution can also free faculty time to provide more personalized guidance to students—guidance that cannot be replaced by automated digital tools. Similarly, students also achieve proficiencies with the support and guidance of administrators and staff, community leaders, professional mentors, and others. They are in an important sense “faculty” as well. It is critical that *all* students, and especially new majority students, have the benefits of this kind of faculty guidance and mentoring. The emerging role of the digital learning ecosystem and the continuing need for talented faculty are noted across the five GEMs principles.

The GEMs Principles and Guidelines provide a set of suggested steps and questions to ask that will guide institutions in redesigning general education. They were developed in consultation with and informed by the work of educators and institutions that are already positioning themselves to better serve twenty-first-century learners and to meet the needs and challenges of twenty-first-century society. AAC&U thanks all who have contributed to the development of this document. And we welcome the entire educational community to the much-needed work of redesigning general education for twenty-first-century learners.

3. Design Principles and Guidelines for General Education

PROFICIENCY

Colleges and universities should provide clear statements of desired learning outcomes for all students. Similarly, general education, in all institutional and alternative settings, should provide programs, curricula, and experiences that lead to the development of demonstrable, portable proficiencies aligned to widely valued twenty-first-century knowledge and skills. Students should achieve and demonstrate progressively higher levels of proficiency through problem-centered work on significant issues relevant to their interests and aims.

Below are initial steps and questions to consider in designing and evaluating curricula, programs, and pedagogy.

Initial steps: To foster proficiency-based learning, the institution needs to articulate degree-level learning outcomes or proficiencies that apply to all students, and general education needs to align its own proficiency expectations to those degree-level requirements. For public higher education, these institutional proficiency requirements should be keyed to system-level learning outcome frameworks. The LEAP Essential Learning Outcomes and the Degree Qualifications Profile provide reference points for high-quality learning and guidance for institutions on how to ensure that students develop these proficiencies across both general education and major programs.

QUESTIONS TO CONSIDER:

Student Experience and Achievement

- Do students, with guidance and support of faculty and others, have a clear understanding of the desired learning outcomes or proficiencies, and of their importance to work, life, and democratic community?
- Do students understand how to achieve increasing levels of proficiency relevant to their backgrounds and evolving interests at every stage of their education, from entry at any point to degree or credential?³
- Can students achieve and demonstrate their proficiencies and integrate their educational experiences in several institutions and in different environments—through prior learning experiences, in cocurricular and community activities, and in digital environments?
- Do students frequently work on problem-based assignments along their educational pathways?
- Are there multiple opportunities for problem-based work on topics of relevance and interest to students to provide greater engagement and success?
- Do students learn how to approach and solve complex problems, producing their own Signature Work?
- Does students' work on complex problems leverage appropriate technologies and data and involve them with virtual communities of practice and action?

³ The Degree Qualifications Profile (DQP) provides a statement of desired proficiencies at various levels (see fig. 1, page 8). The DQP, or comparable statements of desired learning goals and levels of achievement, is relevant to all areas of the program or curriculum, including general education and the major, and allows for transfer across institutions.

- Is some form of integrative, cross-disciplinary, and culminating work required for the degree at the associate level, as well as the baccalaureate level?

Institutional and Faculty Support

- Are there clear statements of desired learning outcomes for all students at your college or university? Are these expectations frequently explored with students?
- Does each course or experience that contributes to general education clearly explain the cross-cutting or transferable proficiencies it helps students develop? Are the assignments transparently connected to the expected proficiencies?
- Do faculty and staff work intentionally and collaboratively on the design of assignments that effectively help students practice, develop, and demonstrate the cross-cutting proficiencies that the institution has articulated both for the degree and for general education?
- Do the proficiency assignments in general education courses—whether face-to-face, online, or blended—help students both engage and apply modes of inquiry appropriate to the relevant area of inquiry (e.g., the sciences, the social sciences, the arts, and the humanities)?
- Do *all* students have access to practices and programs that lead to equitable achievement of proficiency outcomes, regardless of their backgrounds or prior educational experiences?
- Does the institution constantly monitor, report, and respond to assessment results to reduce or eliminate any achievement gaps between and among groups?
- Is there ongoing attention to the effectiveness of assignments and other degree expectations such as capstone projects in helping students achieve and demonstrate expected learning outcomes or proficiencies?
- As faculty and others guide students' work, do they explicitly help students reflect on the relationship between this work and proficiency development?
- Does faculty training and development, including for contingent faculty, focus on helping all students achieve proficiencies and designing assignments and assessments that allow students to demonstrate their proficiency levels?
- Do faculty, university staff, and administrators make appropriate use of learning data to guide and make transparent the development of student proficiency levels?

AGENCY AND SELF-DIRECTION

General education should play a critical role in helping *all* students understand, pursue, and develop the proficiencies needed for work, life, and responsible citizenship. Students should be active participants in creating an educational plan in which they identify and produce high-quality work on significant questions that are meaningful to them. Undergraduate education should enable students to understand the intellectual and personal capacities they are developing that will help them achieve their educational and professional goals, enrich their lives, and act in principled and constructive ways, both as individuals and in their roles in society.

Below are initial steps and questions to consider in designing and evaluating curricula, programs, and pedagogy.

Initial steps: The program design should involve students in planning a program that includes learning experiences intended to prepare them both for knowledgeable citizenship in a self-governing democracy and for continuous learning and professional development in their careers. The program also should provide opportunities for students to pursue cross-disciplinary questions of relevance and interest to them, including both civic questions and issues *and* topics and problems important for their intended careers. Ideally, major programs also determine how their requirements give students the opportunity to use and further develop the cross-disciplinary knowledge and proficiencies fostered through general education.

QUESTIONS TO CONSIDER:

Student Experience and Achievement

- Throughout a student's educational experience, especially at the beginning, do faculty members and staff provide support, advice, and assistance to help students create their educational path and plan?
- Are students' strengths and interests the starting point for their participation in undergraduate education at any point in their lives?
- Do students actively participate in defining, developing, and reflecting on their personal, professional, and societal goals and the ways to achieve them?
- Are students actively working on cross-disciplinary questions, problems, and projects that are important to democracy? To their intended careers?
- With guidance and support from faculty members and staff, do students continuously develop a narrative of how their academic and other experiences lead to their growth as responsible, productive citizens and individuals and as thoughtful and ethically responsible professionals?
- Does this narrative focus on and contribute to a student's "body of work" documenting his or her experiences and achievements?
- Can each student demonstrate and explain his or her own best or Signature Work (see definition on page 10)?

Institutional and Faculty Support

- Are general education programs, curricula, courses, and related experiences designed in ways that clearly articulate for students how and where they can develop and demonstrate proficiencies?

- Are general education programs, curricula, courses, and related experiences designed in ways that help students integrate and apply their learning to complex questions?
- Do students receive institutional and personal guidance and support to follow an educational path that supports transfer by showing transparently which proficiencies students have achieved?
- Are general education learning outcomes and degree requirements developed in concert with partners in other institutions so that, when students transfer, they will find that the learning they achieved in their initial general education program is recognized, valued, and further developed once they have enrolled in a subsequent institution?
- Are general education curricula and programs responsive to students' different identities, experiences, prior education, and preparedness, and do they intentionally aim for inclusive, equitable learning experiences?
- Are substantial institutional resources devoted to equitably guiding and assisting all students in making progress on their individual educational paths, taking into account students' differing circumstances and needs, but ensuring that outcomes are not determined by students' racial, ethnic, class, or regional backgrounds?
- Are new digital tools and resources used to provide students with multiple opportunities to participate in active learning environments as part of their education?
- Are digital resources chosen to expand and strengthen students' participation in interactive, collaborative, and cross-disciplinary learning?
- Are digital tools used to expand students' engagement with and learning from people whose experiences are different from their own?

INTEGRATIVE LEARNING AND PROBLEM-BASED INQUIRY

Students should develop and demonstrate proficiency through a combination and integration of curricular, cocurricular, and community-based learning, as well as prior learning experiences, including in institutions and in local, global, and virtual communities and networks. Students should demonstrate proficiencies through inquiry into unscripted problems that are relevant to students' interests and aims and where a full understanding of the problem requires insights from multiple areas of study.

Below are initial steps and questions to consider in designing and evaluating curricula, programs, and pedagogy.

Initial steps: In developing curricular maps that indicate where proficiencies can be achieved, the institution or program makes a commitment to helping students integrate and apply their learning from multiple fields to complex questions and problems. In designing the general education program, for both the sophomore or associate degree level and for the final years of college, faculty and staff create opportunities for students to explore a significant cross-cutting question (or questions) that integrates their learning from multiple fields of study, including their major field.

QUESTIONS TO CONSIDER:

Student Experience and Achievement

- Do students formally reflect on how proficiencies are progressively developed and demonstrated in different settings—for example, between and among courses and in cocurricular activities, communities of practice and action, virtual networks, internships, service-learning experiences, and prior experience in work, military service, or volunteering?
- Does the program help students integrate and apply their learning by expecting students to explore significant cross-cutting questions and to produce high-quality work—Signature Work—that shows both their integration of learning across disciplines and their achievement of essential proficiencies?
- Where relevant, does integrative and applied work include field-based as well as academic learning?
- Do students understand how different settings, communities of practice, and participatory cultures provide opportunities to engage in problem-based inquiry?
- Is the student able to articulate his or her story of integrative learning and development through increasingly challenging inquiry and work?
- Are e-portfolios and digital profiles used to enable students to integrate and document their reflections, Signature Work projects, and other demonstrations of proficiency and work in various settings?
- Can students use technology to correctly integrate data to solve complex problems?

Institutional and Faculty Support

- Does the general education program clearly map and guide students along integrative curricular, cocurricular, and experiential pathways that progressively develop proficiencies?
- Does the program design help students prepare to produce high-quality, cross-cutting work and provide guidance and feedback on both students' preparation and the quality of their signature project(s) or studies?

- Do faculty and staff act as models, teachers, mentors, and guides, coaching students along their intended pathways as they engage in significant problem-based inquiry?
- Are faculty members mindful of and able to help students productively connect with multiple communities, within and beyond higher education, to achieve their learning goals?
- Is faculty development, including for contingent faculty, building the capacity of faculty to work with students across institutions and learning environments?
- Does the institutional reward system reinforce the value of faculty and staff support for students' active involvement in integrative and problem-centered learning?

EQUITY

General education programs should be equity-minded⁴ in design and implementation. This requires a cognitive shift in the ways faculty and administrators understand and address inequalities in outcomes among students of color, students with disabilities, low-income and first-generation students, returning adult students, veterans, and other underserved groups. General education programs should advance practices and policies that are aimed at achieving the full spectrum of learning outcomes for all students regardless of their backgrounds.

Below are initial steps and questions to consider in designing and evaluating curricula, programs, and pedagogy.

Initial steps: Colleges, universities, and public systems of higher education should frame the equity challenge in terms of helping all students build on the talents, strengths, and interests they bring to undergraduate education rather than repairing specific students' assumed deficits. Institutions and programs need to commit to exploring whether institutional practices may perpetuate patterns of stratification and inequitable participation, for example, in honors programs or in high-impact practices such as internships and undergraduate research. Institutions and programs should further commit to clarity in language, goals, and measures necessary for expanding access to excellence for all students and to ongoing study of practices that help ensure both equity and high achievement for students from all racial, ethnic, and socioeconomic backgrounds.

QUESTIONS TO CONSIDER:

Student Experience and Achievement

- At entry or transfer points, are students' strengths, needs, and interests clearly assessed for purposes of advising and planning?
- Are degree plans customized to meet students where they are and support them in meeting expected standards?
- Do curricular materials and assignments take into account students' identities, lived experiences, and needs?
- Are assessments and teaching practices flexible, culturally responsive, and attentive to students' learning styles, incorporating multiple approaches to learning?
- Is there ongoing examination of campus environments and attention to whether all students feel welcomed, supported, and helped in achieving their goals?
- Are institutional mission, curricula, and program statements interpreted in terms of achievement of proficiencies for all students?
- Are policies and practices crafted to define equity in terms of access, success, inclusion, and excellence in higher education for all students?

Institutional and Faculty Support

- Is equity enacted institution-wide and at scale, not in the margins? Do curricula and programs, as well as organizational policies and practices, reflect equity-minded approaches to student learning and success?

⁴ See the definition of "equity-minded" on page 9.

- Does equity inform both the design of individual components of educational delivery and the entire operational structure of an institution, including discussions of core management operations?
- Are new models of educational delivery and credentialing designed so that equitable practices are engineered into the core goals, theories of change, and benchmarks of implementation and evaluation?
- Are digital tools used to ensure access to the most empowering forms of learning for students in all programs—online, face-to-face, and blended—and not just for selected groups of students?
- Do organizational policies and structures support equitable change, including faculty and staff development, to eliminate practices and structural barriers that work against equity?
- Is evidence gathered and disaggregated to help faculty, staff, and the institution as a whole support students' inclusion, educational progress, and success in both learning and degree attainment?
- Are there clear measures and benchmarks to measure progress toward equity goals?
- Do leaders proactively build a case—externally and internally—for providing opportunity-creating forms of learning to all students, and not just to selected groups of students?

TRANSPARENCY AND ASSESSMENT

Students, faculty members, and other stakeholders should understand what proficiencies are being developed in any general education program, course, or activity, and how these proficiencies can be demonstrated at key milestones in students' progress toward the degree. Students and institutions should be able to point to student work, especially work involving problem- and project-based inquiry (Signature Work), as demonstrations of proficiency worthy of credit across institutional settings and as a body of work associated with earning the degree.

Below are initial steps and questions to consider in designing and evaluating curricula, programs, and pedagogy.

Initial steps: Colleges, universities, and public systems of higher education should commit to assessing students' authentic work for evidence of achievement of proficiencies and integrative, problem-based learning. Faculty, staff, and students work together to assess students' progress, and the results of these assessments are used both for program improvement and to help individual students improve (Sullivan 2014).

QUESTIONS TO CONSIDER:

Student Experience and Achievement

- In both institutional and alternative educational settings, are students able, with faculty members' and others' support and guidance, to organize, reflect on, and demonstrate to others their achievement of proficiencies, especially through meaningful achievement in work on integrative, cross-disciplinary problems and projects?
- Are alternative transcripts and credentials used to provide a means for recognizing students' achievement of proficiencies that are particularly relevant to students' educational aims and needs?
- Are students' achievements of proficiencies assessed and reported on at several levels (course, program, institution) to enable students to understand their progress?
- Do students receive guidance and help to ensure that they will meet the expected standards for achievement?

Institutional and Faculty Support

- Are there shared, rubric-based assessments, such as the use of VALUE rubrics, to provide a means for responding to students' individual levels of development to ensure quality and achieve equity?
- Are faculty criteria for assessment of student work clearly related to proficiencies?
- Are there faculty development opportunities regarding assessment that include a focus on the role of digital tools and learning environments in assessment?
- Do institutional assessments disaggregate results to inform equity-minded institutional change efforts?
- Are faculty actively involved in shaping and using institutional inquiries related to equity and needed areas of improvement?
- Does the institution widely share these reports, get feedback on them, and use them in faculty and program development and dialogue with students and other stakeholders to improve results?

- Are e-portfolios available to provide a means for organizing, displaying, and assessing students' demonstrations of proficiency and for assembling and transferring a student's work across institutions?
- Are digital environments and communities used to provide comparable settings and mechanisms for demonstrating and assessing a student's "body of work"?
- Does the institution work actively with transfer partners to ensure that students' learning is transferable, recognized, valued, and further supported once transfer has occurred?

Conclusion

Implementing the GEMs Design Principles and Guidelines will make general education an empowering experience for all students. It will help students develop and demonstrate broad-based proficiencies and principled commitments that prepare them well for work, life, and responsible citizenship.

Directly engaging the power of the digital age and the enormous potential of America's demographic revolution, GEMs provides clear standards for quality and ways of demonstrating results for students and stakeholders. Following a plan and path through intentional and integrative curricula and programs, within and across institutions, students will actively and deeply engage in problem-centered inquiry into contemporary and enduring challenges. This kind of empowering general education will be—must be—available equitably for all students regardless of differences in background, identities, and ways of learning.

As AAC&U moves into its second century, GEMs and other initiatives will continue to promote liberal education—tied to twenty-first-century challenges and embracing the nation's new majority underserved learners—as America's most important investment for expanding opportunity, growing and sustaining a vibrant economy, and ensuring a strong future for democracy.

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APPENDIX

Liberal Education and America's Promise: AAC&U's Framework for Quality Learning and Inclusive Excellence

AAC&U's initiative Liberal Education and America's Promise: Excellence for Everyone as a Nation Goes to College (LEAP) was launched in 2005 and asks core questions about the learning students need most from college; listens and responds as employers make the case that today's workers need to be better prepared for a global economy; and focuses on education for knowledgeable and responsible citizenship, as well as careers.

The LEAP Vision includes a commitment to

- **Essential Learning Outcomes.** These are the learning outcomes essential for success in life and work in the twenty-first century (see page 28).
- **High-Impact Educational Practices (HIPs).** These are evidence-based practices that engage and challenge students. They include first-year seminars, intensive writing, collaborative projects, internships, learning communities, service learning, undergraduate research, capstone courses, and diversity/global learning courses and programs.
- **VALUE Assessments.** Using students' own work and faculty-validated VALUE rubrics, colleges should probe whether each student has developed Essential Learning Outcomes, and can apply his or her learning to complex problems and real-world challenges.
- **Inclusive Excellence.** All students at every kind of institution should benefit from a deep, hands-on, and practical liberal education that prepares them for success in work, life, and citizenship.

LEAP Strategies for Change

Hundreds of institutions and a growing roster of state systems now are using the LEAP framework of Essential Learning Outcomes, high-impact educational practices, VALUE assessments, and inclusive excellence.

The next phase of work in the LEAP initiative is intended to help institutions take their foundational work on liberal education and inclusive excellence to the next level. The long-term goal is to ensure that every one of our students reaps the full benefit of an empowering liberal education, no matter what his or her background, intended major, or career and life aspirations. There are many pathways to students' achievement and demonstration of Essential Learning Outcomes. General education should help students chart their way forward and prepare to do their Signature Work. Each of our students deserves our help in finding the right pathway.

The LEAP Principles of Excellence

The Principles of Excellence offer both challenging standards and flexible guidance so they can support high-quality learning and inclusive excellence at any college, university, or community college. These principles can be used to guide change and to influence practice across the disciplines as well as in general education programs. They are highly consistent with the Degree Qualifications Profile and the GEMs Principles and Guidelines. AAC&U uses the terms “Essential Learning Outcomes” and “proficiencies” interchangeably.



★ Principle One

Aim High—and Make Excellence Inclusive

Make the Essential Learning Outcomes a Framework for the Entire Educational Experience, Connecting School, College, Work, and Life

★ Principle Two

Give Students a Compass

Focus Each Student's Plan of Study on Achieving the Essential Learning Outcomes—and Assess Progress

★ Principle Three

Teach the Arts of Inquiry and Innovation

Immerse All Students in Analysis, Discovery, Problem Solving, and Communication, Beginning in School and Advancing in College

★ Principle Four

Engage the Big Questions

Teach through the Curriculum to Far-Reaching Issues—Contemporary and Enduring—in Science and Society, Cultures and Values, Global Interdependence, the Changing Economy, and Human Dignity and Freedom

★ Principle Five

Connect Knowledge with Choices and Action

Prepare Students for Citizenship and Work through Engaged and Guided Learning on “Real-World” Problems

★ Principle Six

Foster Civic, Intercultural, and Ethical Learning

Emphasize Personal and Social Responsibility, in Every Field of Study

★ Principle Seven

Assess Students' Ability to Apply Learning to Complex Problems

Use Assessment to Deepen Learning and to Establish a Culture of Shared Purpose and Continuous Improvement

Note: Adapted from *College Learning for the New Global Century* (National Leadership Council for Liberal Education and America's Promise 2007).

The LEAP Essential Learning Outcomes

Beginning in school, and continuing at successively higher levels across their college studies, students can prepare for both responsible citizenship and a global economy by achieving the Essential Learning Outcomes (ELOs).



★ Knowledge of Human Cultures and the Physical and Natural World

- Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts

Focused by engagement with big questions, both contemporary and enduring

★ Intellectual and Practical Skills, including

- Inquiry and analysis
- Critical and creative thinking
- Written and oral communication
- Quantitative literacy
- Information literacy
- Teamwork and problem solving

Practiced extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance

★ Personal and Social Responsibility, including

- Civic knowledge and engagement—local and global
- Intercultural knowledge and competence
- Ethical reasoning and action
- Foundations and skills for lifelong learning

Anchored through active involvement with diverse communities and real-world challenges

★ Integrative and Applied Learning, including

- Synthesis and advanced accomplishment across general and specialized studies

Demonstrated through the application of knowledge, skills, and responsibilities to new settings and complex problems

Note: This listing was developed through a multiyear dialogue with employers and with hundreds of colleges and universities about needed goals for student learning; analysis of a long series of recommendations and reports from the business community; and analysis of the accreditation requirements for engineering, business, nursing, and teacher education. The findings are documented in previous publications of the Association of American Colleges and Universities: *College Learning for the New Global Century* (National Leadership Council for Liberal Education and America's Promise 2007) and *The LEAP Vision for Learning* (AAC&U 2011). For more information, see www.aacu.org/leap.



General Education Maps and Markers (GEMs) is a new and far-reaching initiative designed to significantly improve the quality of undergraduate education, increase student success rates, and chart a new course for general education curriculum design that is aligned with twenty-first-century goals for learning. GEMs—supported with an initial grant from the Bill & Melinda Gates Foundation—draws upon AAC&U’s long-standing work in the area of curricular reform in order to develop an adaptive and proficiency-based framework for general education. The initiative foregrounds problem-centered inquiry as the touchstone for quality in twenty-first-century undergraduate learning. Through the GEMs initiative, AAC&U seeks to ensure that all students, and particularly those from groups that have been traditionally underserved by higher education, are engaged in deep, inquiry-based learning and have multiple opportunities to apply their knowledge, skills, and ethical responsibilities to complex problems and questions.

About AAC&U

The Association of American Colleges and Universities (AAC&U) is the leading national association concerned with the quality, vitality, and public standing of undergraduate liberal education. Its members are committed to extending the advantages of a liberal education to all students, regardless of academic specialization or intended career. Founded in 1915, AAC&U now comprises more than 1,300 member institutions—including accredited public and private colleges, community colleges, research universities, and comprehensive universities of every type and size. AAC&U functions as a catalyst and facilitator, forging links among presidents, administrators, and faculty members who are engaged in institutional and curricular planning. Its mission is to reinforce the collective commitment to liberal education and inclusive excellence at both the national and local levels, and to help individual institutions keep the quality of student learning at the core of their work as they evolve to meet new economic and social challenges.

Information about AAC&U membership, programs, and publications can be found at www.aacu.org.



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