The Degree Qualifications Profile

Defining degrees: A new direction for American higher education to be tested and developed in partnership with faculty, students, leaders and stakeholders

Lumina™ FOUNDATION

Acknowledgments
Lumina Foundation would like to thank the authors: Cliff Adelman, senior associate at the Institute for Higher Education Policy (IHEP); Peter Ewell, vice president at the National Center for Higher Education Management Systems (NCHEMS); Paul Gaston, trustees professor at Kent State University and author of *The Challenge of Bologna*; and Carol Geary Schneider, president of the Association of American Colleges & Universities (AAC&U).

Lumina would also like to thank Chun-Mei Zhao for significant contributions in gathering sources, in editing, and in presentation of this document and Tim Birtwistle for his guidance and expertise.

Lumina Foundation for Education, an Indianapolis-based private foundation, is committed to enrolling and graduating more students from college — especially 21st century students: low-income students, students of color, first-generation students and adult learners. Lumina's goal is to increase the proportion of Americans who hold high-quality degrees and credentials to 60 percent by 2025. Lumina pursues this goal in three ways: by identifying and supporting effective practice, through public policy advocacy, and by using our communications and convening power to build public will for change.

Introduction

Through this document, Lumina Foundation for Education offers a "Degree Qualifications Profile," a tool that can help transform U.S. higher education. A Degree Profile — or qualifications framework — illustrates clearly what students should be expected to know and be able to do once they earn their degrees — at any level. This Degree Profile thus proposes specific learning outcomes that benchmark the associate, bachelor's and master's degrees — which constitute the great majority of postsecondary degrees awarded by U.S. colleges and universities — regardless of a student's field of specialization.[1]

The learning outcomes specified in this Degree Profile are not without precedent. In fact, the Degree Profile draws on more than a decade of widespread debate and effort, across all levels of U.S. higher education, to define expected learning outcomes that graduates need for work, citizenship, global participation and life.

Building from this work, this Degree Profile is deliberately offered as a "beta version" that will be further tested and refined by a variety of stakeholders. The long-term goal is to clearly define quality in American higher education and to develop new capacity throughout postsecondary education to ensure that students achieve the levels of learning they need and deserve.

The need for a Degree Profile

Higher learning has taken on new importance in today's knowledge society. To succeed in the contemporary workplace, today's students must prepare for jobs that are rapidly changing, use technologies that are still emerging and work with colleagues from (and often in) all parts of the globe. The challenges that graduates face as citizens during their lives are similarly complex and also are affected by developments around the world.

Recognizing the economic and societal importance of higher levels of learning, national leaders, policymakers, analysts and major philanthropies have called for a dramatic increase in the number of high-quality degrees awarded in the United States. But the press toward helping many more students earn degrees has not been grounded in any consistent public understanding of what these degrees ought to mean. Even as colleges and universities have defined their own expected student learning outcomes — typically to meet accreditation requirements — their discussions have been largely invisible to policy leaders, the public and many students. Similarly, while higher education institutions have been under increasing pressure to be accountable for the quality of their degrees, institutions have frequently responded by testing samples of students in ways that say too little about learning and even less about what *all* students should attain as they progress through college.

The Degree Profile responds to these concerns by describing concretely what is meant by each of the degrees addressed. Though clarity is certainly the goal, this effort is in no way an attempt to standardize degrees. Nor does the Degree Profile define what should be taught or how instructors should teach it. Instead, the Degree Profile describes student performance appropriate for each degree level through clear reference points that indicate the incremental and cumulative nature of learning. Focusing on conceptual knowledge and essential competencies and their applications, the Degree Profile illustrates how students should be expected to perform at progressively more challenging levels. Students' demonstrated achievement in performing at these ascending levels creates the grounds on which degrees are awarded.

[1] Doctorates are not included at this time because of their emphasis on advanced research skills specific to individual disciplines. Medicine, law, and other such degrees are also excluded at this time because of their exclusive focus on advanced practice knowledge and skills. Profiles for these advanced degrees may be proposed later.

The Degree Profile offers reference points, in short, for all associate, bachelor's and master's degrees. But no outcomes framework can or should attempt to address every element of a college education. The Degree Profile will take on its full meaning in the context of diverse institutional missions — for example, religious exploration or proficiency in the performing arts.

In addition, many colleges and universities emphasize their role in fostering personal growth and helping students examine their values and commitments. But such elements of institutional mission rarely are specified as criteria for awarding degrees. Therefore, they are not explicitly included in this Degree Profile, even though values reflection and personal growth are inherent in many of the competencies that the Profile does include.

Use of the Degree Profile over time should yield several positive results, including:

- A common vocabulary for sharing good practice.
- A foundation for better public understanding of what institutions of higher education do.
- Reference points for accountability that are far stronger than test scores or tallies of graduates, research dollars, student satisfaction ratings, job placements or patents.

More to the point, because the Degree Profile defines competencies in ways that emphasize both the cumulative *integration* of learning from many sources and the *application* of learning in a variety of settings, it can offer benchmarks for improving the quality of learning.

Further, because every stated learning outcome should lead to and support assessment, this resource is also designed to encourage colleges and universities to enhance their assessment practices and/or develop new assessments. While some institutions have developed impressive approaches to documenting what students achieve, all should find in the Degree Profile a helpful prompt to improve on those efforts. And every institution should expand this Degree Profile by adding outcomes that are specific to its mission and by aligning them with assessments in use or under development.

The uses of a Degree Profile

The Degree Profile proposes a set of reference points that benchmark what it should take for students to earn a degree at each of the three levels addressed — in addition to whatever an institution requires in terms of credits, grades and specific course completions. Beyond encouraging thoughtful discussion and evolution of those reference points, the Degree Profile can serve other purposes either lacking or imperfectly realized in American higher education today. While it is difficult to anticipate all of the purposes that the Degree Profile can serve, there are several obvious applications that deserve mention.

At the curriculum and classroom level, instructors and students can refer to the Degree Profile as a common source of understanding and as a point of departure for agreement on more detailed and specific expectations regarding the development of programs, courses, assignments and assessments. At the college and university level, the Degree Profile provides reference points that allow faculty members to articulate and better align institutional student learning outcomes with departmental objectives.

The Degree Profile also should offer students and advisers reference points for degree planning. In addition, institutions can use the Degree Profile to help align their expectations with those of other institutions and to give prospective students a clear statement of the outcomes they seek to assure. Regional accreditors should find that the Degree Profile prompts them to reach the consensus on learning outcomes that is being sought by many leaders and opinion makers. And specialized accreditors can use the Degree Profile as a platform for relating disciplinary expectations to institutional ones.

In addition, the focus on student learning embodied in the Degree Profile and its clear demarcation of increasing levels of challenge as a student progresses from one degree level to the next should enable:

- A continuing and sustainable emphasis on learning as the proper determinant for the quality and value of degrees. This should help correct the tendency to view the credential as an end in itself, independent of the learning it should represent.
- Refinement and further elaboration of points of alignment between and among secondary schools and postsecondary institutions regarding achievement levels in specific knowledge, skill and application areas.
- Guidance (a) for students on what to expect at the next degree level, (b) for students who intend to transfer from one institution to another, and (c) for students returning to higher education after a period of absence.
- Expansion and elaboration of connections between school-based learning and out-of-school learning, including creditable prior learning (e.g., from employment) by adult students.
- Development of reference points to assess students' progress and levels of achievement in relation to specific learning outcomes.

Contexts for a Degree Profile

This Degree Profile was prompted and informed by similar exercises in other countries, usually called qualifications frameworks. However, it focuses on the issues, strengths and potential that are distinctive to higher education in the United States. American higher education is marked by a commitment to wide access, to rich diversity, to academic freedom and its responsibilities, to broad liberal education as well as specialized learning, to civic education for a democracy, and to innovative, integrative, inquiry-focused and collaborative pedagogies.

American higher education also emphasizes application of skills and knowledge. Most students enrolled at the associate, bachelor's and master's levels in our nation today are pursuing degrees in occupationally related fields, from medical technology to engineering to accounting. This Degree Profile embraces both applied fields such as these and the traditional arts and sciences by establishing learning outcomes that are common and critical to all fields. Looking to the future, because current and prospective students will face changing workplace demands, new technologies, civic challenges, and expanded parameters of knowledge, the Degree Profile emphasizes analysis, adaptation and application within both occupational fields and the arts and sciences.

The emphasis on application also acknowledges the importance of an educational experience rich in field-related projects, performances, investigative essays, demonstrations and other learning-intensive activities. And it points to the many ways in which students now demonstrate their growth in knowledge and competence. While conventional testing may still be useful, students often provide more persuasive evidence of their learning through assigned tasks and major projects both within and beyond the classroom. Any useful Degree Profile must be sensitive to these experiences and able to accommodate an increasing diversity of evidence from a variety of valid assessment techniques.

Fortunately, the nation is not starting from scratch in crafting a transformational, competence-based Degree Profile. Institutions representing every sector of American higher education can already present exemplary cases of competency-based education. There also are groups of faculty, administrators and

institutional researchers working to improve the understanding of student learning outcomes and of the experiences and practices that move students toward those outcomes. Several disciplines have a solid history of clarifying objectives for learning and of engaging multiple stakeholders to establish benchmarks for reaching these objectives. National associations have launched bold projects to help craft the kind of credential that can be negotiable well into the 21st century. However laudable, though, these efforts are largely separate from one another and almost unknown to students or the public. One aim of this Degree Profile is to create a platform where such worthy undertakings come together.

The Degree Profile also acknowledges recent efforts within the K-12 community to reach a deeper — and *shared* — understanding of educational outcomes. Inevitably, the Degree Profile will contribute to and enlarge the research and discussions driving these efforts. Moreover, growing support of the Degree Profile should help K-12 and higher education work effectively together to provide the learning that individuals and our society will need in the decades to come. This presentation, however, focuses solely on the work that is necessary in higher education. Pre-collegiate learning standards are the proper purview of other initiatives.

The value of a Degree Profile for the student

American college students choose from among hundreds of fields of study, often with scant information to guide them in that choice. This Degree Profile — because it clearly defines the learning that each degree should reflect, regardless of the major field of study — should help all students develop and pursue a coherent, meaningful and efficient education plan. In effect, it can serve as a roadmap for navigating the often-fragmented landscape of higher education options.

We know, of course, that students must become masters of the content and methods in the fields they study in depth. The Degree Profile contributes to that goal by providing general reference points for acquiring field-specific knowledge and competence — core dimensions of higher learning that specific fields will elaborate in greater detail. But we also know that most students will change jobs and even fields many times during their lives. Therefore, the Degree Profile strongly emphasizes the kinds of crosscutting competencies that graduates need for continuous learning in complex and changing environments.

Students who understand the purposes of the courses they take usually learn more effectively. Therefore, the Degree Profile seeks to create a transparent and intentional environment to guide their learning. Such an environment should prove particularly hospitable to working adults and returning students because it will enable them to apply what they have learned elsewhere to their postsecondary degree programs. Indeed, by emphasizing what students can do with their knowledge, the Degree Profile supports the idea of validating and awarding academic credit for the learning acquired in work, military or other life settings. Thus, it should encourage efforts to expand the assessment of many different forms of experiential learning.

Use of the Degree Profile should also help students commit themselves to prepare fully for citizenship, for contribution to the economy, and for the accomplishment of their goals. We can imagine students signing a statement upon enrollment that says: “I have read and understand the learning outcomes for the degree I seek, and I commit myself to investing the time, energy, organization and creativity to qualify for that degree.” An over-arching student learning agreement for each degree should be an indispensable outgrowth of the framework envisioned here.

Organization of the Degree Profile

The Degree Profile describes five basic areas of learning: Broad, Integrative Knowledge; Specialized Knowledge; Intellectual Skills; Applied Learning, and Civic Learning. While sample outcomes for each area are described independently, in practice there should be considerable overlap and integration. For

example, students gain conceptual understanding and sophistication both by exercising their intellectual skills and by applying their learning to complex questions and challenges in academic and non-college settings. Still, for the sake of clarity, the Degree Profile treats each of the basic areas of learning separately even when the language of the student learning outcomes is similar.

Here are a few guidelines for understanding the learning outcomes as presented in the Degree Profile:

- They are intended to be summative for each degree addressed. Students can attain these outcomes at any point in the course of their academic journeys. Just as learning is cumulative but rarely follows a rigid sequence, evidence for learning is cumulative and reflects programmatic and individual differences.

- The learning outcomes are presented as illustrations. When they indicate a range of performance, the implied forms of assessment are illustrative as well — not exhaustive.

- The descriptions of learning outcomes are presented through active verbs that tell all parties — students, faculty, employers, policymakers and the general public — what students actually should do to demonstrate their mastery. These active verbs are deliberately cast at different levels of sophistication as the Degree Profile moves up the degree ladder. The Degree Profile avoids terms such as "critical thinking," "appreciation," "ability" or "awareness" because these do not describe discrete activities that lead directly to assessments.

- The learning outcomes do not prescribe *how well* a student must demonstrate mastery; they are intended to define the achievement of competence. Standards for quality necessarily embody local judgments based on explicit criteria for performance.

- This document does not invoke illustrations from specific disciplines, occupational fields, institutions or associations. Those illustrations should emerge through use of the Degree Profile and will, over time, enrich it.

- The five broad areas of learning are not presented as necessarily of equal value for all providers of higher education. However, the integration of these areas should represent a widely shared curricular goal.

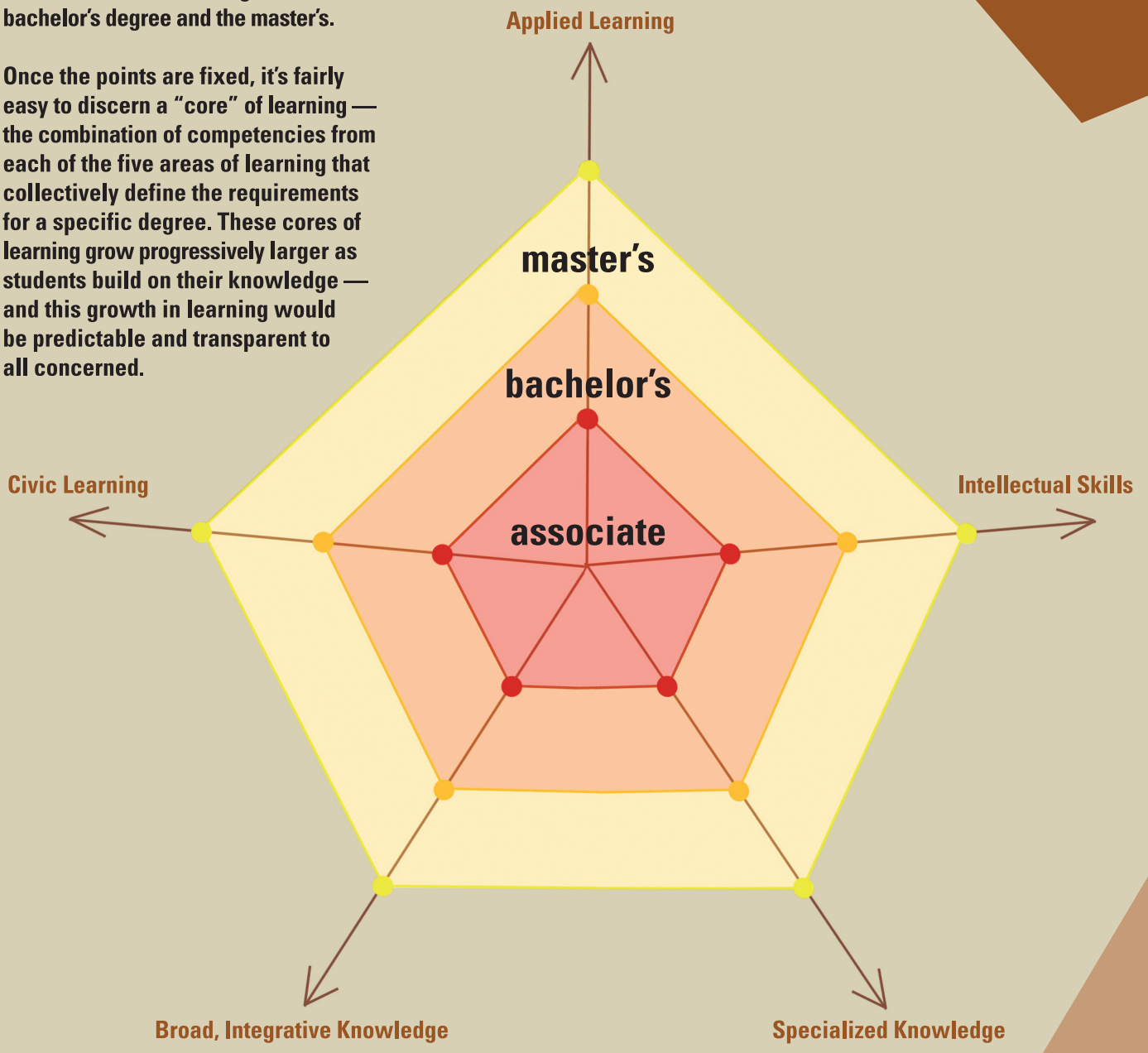
- Finally, although some learning outcomes are reiterated for the sake of emphasis, in practical terms, all outcomes identified for the bachelor's degree assume those listed for the associate degree, and outcomes stated specifically for the master's degree include those for the associate and bachelor's degrees. Each section of the Degree Profile thus demonstrates the principle of incremental challenge and accomplishment from one degree level to the next.

the spid

To best understand the practical application of the Degree Profile, it is helpful to view it as a spiderweb: a structured and interconnected series of ladders that simultaneously build on and support one another. The web is strung among five anchor lines, each line representing one of the basic areas of learning. Along each line, three points are fixed to indicate the extent of learning required to reach each rung on the ladder: the associate degree, the bachelor's degree and the master's.

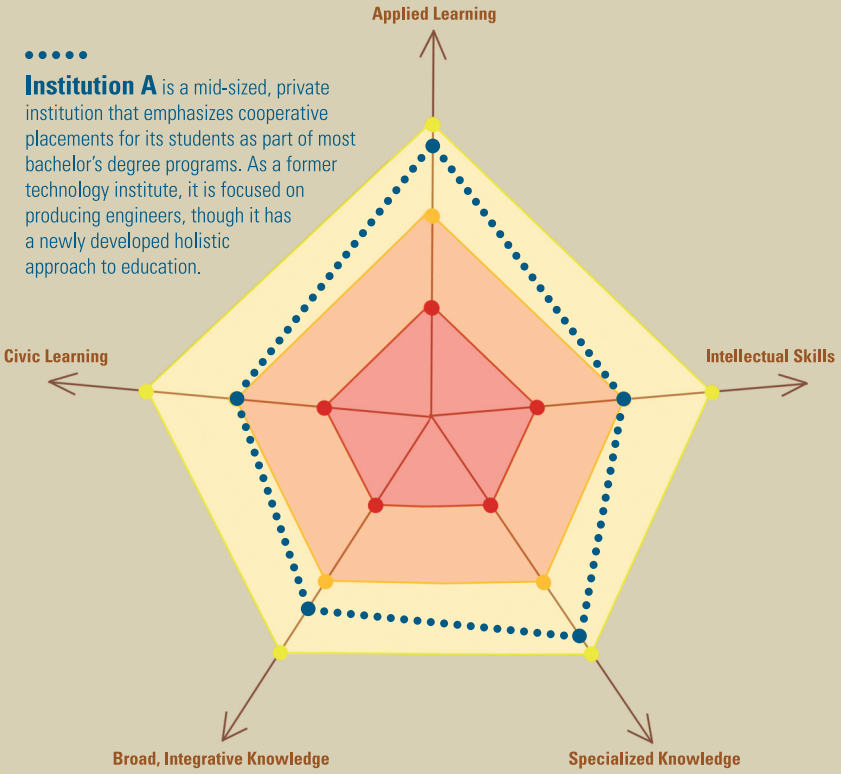
Once the points are fixed, it's fairly easy to discern a "core" of learning — the combination of competencies from each of the five areas of learning that collectively define the requirements for a specific degree. These cores of learning grow progressively larger as students build on their knowledge — and this growth in learning would be predictable and transparent to all concerned.

And yet, predictability and transparency do not lead to rigid standardization. In fact, though certain core learning outcomes are expected in all programs, the range of course content can vary widely — by institution, by discipline — even by individual class section.

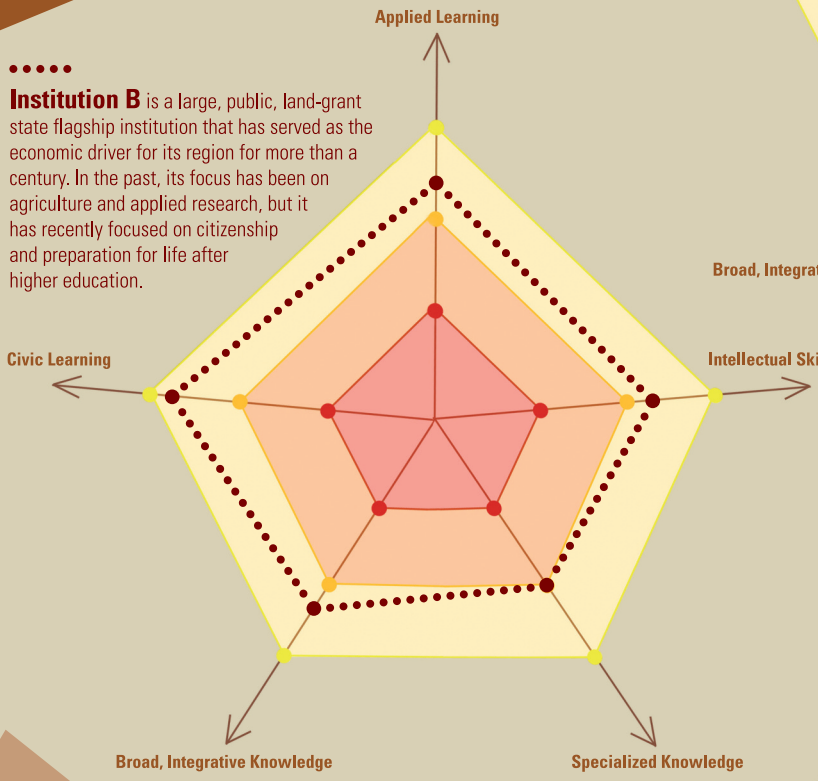


degree profile
erweb

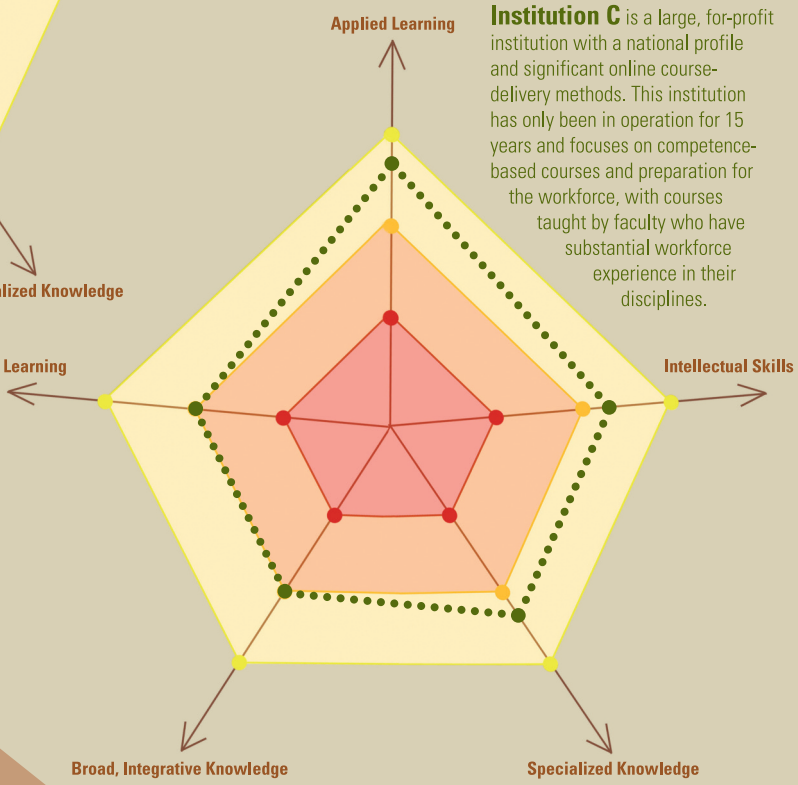
Institution A is a mid-sized, private institution that emphasizes cooperative placements for its students as part of most bachelor's degree programs. As a former technology institute, it is focused on producing engineers, though it has a newly developed holistic approach to education.



Institution B is a large, public, land-grant state flagship institution that has served as the economic driver for its region for more than a century. In the past, its focus has been on agriculture and applied research, but it has recently focused on citizenship and preparation for life after higher education.



Institution C is a large, for-profit institution with a national profile and significant online course-delivery methods. This institution has only been in operation for 15 years and focuses on competence-based courses and preparation for the workforce, with courses taught by faculty who have substantial workforce experience in their disciplines.



3 degrees
5 areas of learning
3 types of institutions

To illustrate the Degree Profile's ability to accommodate almost limitless variety among institutions, three types of institutions are plotted on spiderwebs. Though the bachelor's degree requirements for all three institutions encompass the core learning outcomes, it is clear that each institution also has discrete areas of emphasis and focus for its students.

Two types of knowledge: Specialized and Broad/Integrative

The effective application of learning must reflect the acquisition of knowledge that is both specialized and broad — deep enough to assure mastery of strategically chosen subject areas, broad enough to support inquiry into the relationships among subject areas and the integration of related realms of knowledge. This Degree Profile significantly modifies the traditional distinction between Specialized Knowledge and Broad, Integrative Knowledge. It does so by emphasizing the importance of both and the particular importance of the relationship between them through the integration of ideas, theories, methods, practices and applications.

Outcomes proposed for the associate, bachelor's and master's levels thus begin with the major field (at the associate level, this is most applicable in applied degree programs) and define levels of mastery meant to apply to all disciplines. Such outcomes point to the kinds of knowledge expected at each level, suggest ways in which students might demonstrate that knowledge, and offer grounds for developing effective means of assessment. They also reflect the reality that students gain knowledge throughout their college careers (indeed, throughout their lives) both in and beyond the classroom.

Outcomes proposed with respect to Broad, Integrative Knowledge at the associate, bachelor's and master's levels are not seen as mere additions to foundations laid in pre-collegiate schooling in such areas as English, mathematics, science, history, social sciences, languages and the arts. Rather, the transformational vision expressed through this Degree Profile stresses not only the acquisition of more complex and advanced knowledge in these key knowledge areas, but also the creative integration of such knowledge about science, culture and society with the students' specialized interests.

Intellectual Skills

Intellectual Skills are manifestations of well-defined cognitive capacities and operations, each of which includes applications, and all of which are directly developed through higher education. They therefore span both knowledge and Applied Learning while providing a vital foundation for further learning.

These Intellectual Skills include two critical fluencies: in communications, both oral and written, and in quantitative applications. Analytic inquiry lies at the core of intellectual skills, encompassing what we do when we think — for example, scrutinizing, managing and configuring knowledge prior to communicating findings, perspectives and interpretations. In turn, both expressive activities and the cognitive functions of analysis require students to use information resources effectively. Students need all of these Intellectual Skills to acquire and apply both general and specialized knowledge.

Yet these traditional Intellectual Skills are not sufficient qualifications for a degree. Regardless of their degree level, students certified to go forward as adaptive, creative and entrepreneurial persons must demonstrate competence in understanding and applying differing cultural, political and technological perspectives. The Degree Profile treats these competencies under the heading, "Engaging Diverse Perspectives."

Applied Learning

The Degree Profile includes a set of competencies that typically has not been stressed in discussions of higher education outcomes: Applied Learning. Such competencies provide a connecting theme both for all degrees and for the other three areas of learning listed here. The Applied Learning outcomes make it clear that, beyond what graduates know, what they can *do* with what they know is the ultimate benchmark of learning. They emphasize a commitment to analytic inquiry, active learning, real-world problem solving, and innovation — all of which are vital in today's evolving workplace and in society. Applied Learning should be viewed as a core element of the student experience.

Students demonstrate Applied Learning competencies not only through traditional assignments, but also by actively presenting evidence of mastery. They do this through performances in work settings, interpersonal communication and everyday encounters with economic, social and cultural affairs. In all of these cases, students call on their prior learning while embracing an opportunity for additional learning.

Constantly evolving social, economic and technical environments challenge individuals to continue learning and acquire new skills. By emphasizing the application of learning, higher education helps students anticipate the challenges they will encounter as their jobs and lives become more complex. Therefore, as the Degree Profile indicates, Applied Learning marks the development of student competence in addressing unscripted problems, in weighing competing perspectives and in making decisions in ambiguous contexts.

Civic Learning

Preparing students for responsible citizenship is a widely acknowledged purpose of higher education. Like other forms of application, civic inquiry requires the integration of knowledge and skills acquired in both the broad curriculum and in the student's specialized field. But because civic preparation also requires engagement — that is, practice in applying those skills to representative questions and problems in the wider society — it should be considered a discrete category of learning.

Higher education is experimenting with new ways to prepare students for effective democratic and global citizenship. Virtually all of these efforts use experiential or field-based learning as a means to develop civic insight, competence in public affairs and the ability to contribute to the common good. By definition, field-based learning about civic issues is likely to immerse students in public debate about contested positions.

In developing civic competence, students engage a wide variety of perspectives and evidence and form their own reasoned views on public issues. Civic Learning — which is related to but goes beyond the Intellectual Skill we have labeled "Engaging Diverse Perspectives" — also involves active engagement with others. Exposure to these different perspectives helps students develop their own responses to social, environmental and economic challenges at the local, national and global levels.

The Degree Qualifications Profile (beta version)

This report has so far attempted to describe the Degree Profile by explaining its goals, its structure and the factors that have prompted its development. We turn now to the proposed Degree Profile itself, directly addressing the competencies that the Profile seeks to define.

The Degree Profile is presented here in two ways: First, we describe it in narrative form; second, beginning on Page 18, we show how it might be arrayed on a grid or matrix. (Naturally, to present the Degree Profile accurately using both methods, some amount of repetition is unavoidable — even desirable.)

KNOWLEDGE

This Degree Profile offers a significant modification of the traditional distinction between the broad knowledge acquired through the entire course of one's education and that gleaned through pursuit of a specialized field of study. It emphasizes the integration of ideas, methods, practice and theory across *broad and specialized* knowledge realms.

Specialized Knowledge

Sooner or later, most of those who receive degrees pursue a specialized area of study. Each discipline defines specific requirements and may articulate field-dependent outcomes. The parameters for most

professional and occupationally oriented fields may also be spelled out by specialized accrediting associations and licensure bodies. But across all fields that we call "majors" lie common learning outcomes involving terminology, theory, methods, tools, literature, complex problems or applications, and cognizance of the limits of the field. These are addressed in the ascending set of illustrative challenges presented below.

At the associate level (if and only if a degree award of A.A.S., A.F.A., etc.; see Broad Integrative Knowledge for A.A., A.S. and A.G.S. recipients), the student

- Describes the scope and principal features of his/her field of study, citing at least some of its core theories and practices, and offers a similar explication of at least one related field.
- Illustrates contemporary terminology used in the field.
- Generates substantially error-free products, reconstructions, data, etc. or juried exhibits or performances as appropriate to the field.

At the bachelor's level, the student

- Defines and explains the boundaries and major sub-fields, styles, and/or practices of the field.
- Defines and properly uses the principal specialized terms used in the field, both historical and contemporaneous.
- Demonstrates fluency in the use of tools, technologies and methods common to the field.
- Evaluates, clarifies and frames a complex question or challenge, using perspectives and scholarship drawn from the student's major field and at least one other field.
- Constructs a project related to a familiar but complex problem in his/her field of study by independently assembling, arranging and reformulating ideas, concepts, designs and/or techniques.
- Constructs a summative project, paper, performance or practice-based performance that draws on current research, scholarship and/or techniques in the field.

At the master's level, the student

- Elucidates the major theories, research methods and approaches to inquiry and/or schools of practice in his or her field; articulates their sources; and illustrates both their applications and their relationships to allied fields.
- Assesses the contributions of major figures (and/or organizations, if applicable) in his or her field, describes the major methodologies and/or practices in his or her field; and implements at least two of them through projects, papers, exhibits or performances.
- Articulates a full range of challenges involved in practicing the field; elucidates the leading edges of the field; and delineates the current limits of theory, knowledge and/or

practice in the field by independently initiating, assembling, arranging and reformulating ideas, concepts, designs and/or techniques in carrying out a project directed at a challenge in his or her field that lies outside conventional boundaries.

Broad, Integrative Knowledge

The foundations for general knowledge are laid in pre-collegiate education and should be carried to a higher level in colleges so that graduates acquire the foundation for participation in work, life and citizenship both at home and in the world. Broad higher learning should involve students in the practices of core fields ranging from science and the social sciences through the humanities and arts, and in developing global, cultural and democratic perspectives. While many institutions of higher education relegate general knowledge to the first two years of undergraduate work, this Degree Profile takes the position that broad learning should be integrated and furthered at all degree levels, and should provide a cumulative context for students' specialized studies.

At the associate level, for each of the core areas studied, the student

- Describes how existing knowledge or practice is advanced, tested and revised.
- Describes and examines a range of perspectives on key debates and their significance both within the field and in society.
- Illustrates core concepts of the field while executing analytical, practical or creative tasks.
- Selects and applies recognized methods of the field in interpreting characteristic discipline-based problems.
- Assembles evidence relevant to characteristic problems in the field, describes the significance of the evidence, and uses the evidence in analysis of these problems.
- Describes the ways in which at least two disciplines define, address and interpret the importance of a contemporary challenge or problem in science, the arts, society, human services, economic life or technology.

At the bachelor's level, the student

- Frames a complex scientific, social, technological, economic or aesthetic challenge or problem from the perspectives and literature of at least two academic fields, and proposes a "best approach" to the question or challenge using evidence from those fields.
- Produces, independently or collaboratively, an investigative, creative or practical work that draws on specific theories, tools and methods from at least two academic fields.
- Explains a contemporary or recurring challenge or problem in science, the arts, society, human services, economic life or technology from the perspective of at least two academic fields, explains how the methods of inquiry and/or research in those disciplines can be brought to bear in addressing the challenge, judges the likelihood that the combination of disciplinary perspectives and methods would contribute to the resolution of the challenge, and justifies the importance of the challenge in a social or global context.

At the master's level, the student

- Articulates how his or her own field has developed in relation to other major domains of inquiry and/or practice.
- Designs and executes an applied, investigative or creative work that draws on the perspectives and/or methods of other fields, and assesses the resulting gains and/or difficulties of including fields other than his or her own.
- Articulates and defends the significance and implications of his or her own specialized work in terms of challenges, trends and/or developments in a social or global context.

INTELLECTUAL SKILLS

While the different academic disciplines appropriately define their respective competencies, the five crosscutting Intellectual Skills illustrated below define competencies that should transcend disciplinary boundaries. They frequently overlap and obviously interact with and enable the other major realms of learning described in this Degree Profile. In addition, it should be kept in mind that the competencies at the bachelor's level subsume those at the associate level and that those at the master's level subsume all competencies at prior degree levels.

Analytic inquiry

Because the synthesizing cognitive operations of assembling, combining, formulating and reconstructing information constitute integrative learning, they are principally covered elsewhere in this Degree Profile. But analytic inquiry, though it may involve synthesis, requires separate treatment as a core Intellectual Skill. The following illustrative outcome statements suggest what is meant.

At the associate level, the student

- Identifies, categorizes and distinguishes among elements of ideas, concepts, theories and/or practical approaches to standard problems.

At the bachelor's level, the student

- Differentiates and evaluates theories and approaches to complex standard and non-standard problems within his or her major field and at least one other academic field.

At the master's level, the student

- Disaggregates, adapts, reformulates and employs principal ideas, techniques or methods at the forefront of his or her field of study in the context of an essay or project.

Use of information resources

At the associate level, the student

- Identifies, categorizes, evaluates and cites multiple information resources necessary to engage in projects, papers or performance in his or her program.

At the bachelor's level, the student

- Incorporates multiple information resources presented in different media and/or different languages, in projects, papers or performances, with citations in forms appropriate to those resources, and evaluates the reliability and comparative worth of competing information resources.

- Explicates the ideal characteristics of current information resources for the execution of projects, papers or performances; accesses those resources with appropriate delimiting terms and syntax; and describes the strategies by which he/she identified and searched for those resources.

At the master's level (and in addition to the competencies indicated for the bachelor's level), the student

- Provides adequate evidence (through papers, projects, notebooks, computer files or catalogues) of contributing to, expanding, assessing and/or refining either a broadly recognized information resource or an information base within his or her field of study.

Engaging diverse perspectives

At the associate level, the student

- Describes how knowledge from different cultural perspectives would affect his or her interpretations of prominent problems in politics, society, the arts and/or global relations.

At the bachelor's level, the student

- Constructs a cultural, political, or technological alternative vision of either the natural or human world, embodied in a written project, laboratory report, exhibit, performance, or community service design; defines the distinct patterns in this alternative vision; and explains how they differ from current realities.

At the master's level, the student

- Addresses a core issue in his/her field of study from the perspective of either a different point in time, or a different culture, language, political order, or technological context, and explains how the alternative perspective contributes to results that depart from current norms, dominant cultural assumptions, or technologies — all demonstrated through a project, paper, or performance.

Quantitative fluency

At the associate level, the student

- Presents accurate calculations and symbolic operations, and explains how such calculations and operations are used in either his or her specific field of study or in interpreting social and economic trends.

At the bachelor's level, the student

- Translates verbal problems into mathematical algorithms and constructs valid mathematical arguments using the accepted symbolic system of mathematical reasoning.

- Constructs, as appropriate to his or her major field (or another field), accurate and relevant calculations, estimates, risk analyses or quantitative evaluations of public information and presents them in papers, projects or multi-media events.

At the master's level:

- Students who are not seeking a degree in a quantitatively based field employ and apply mathematical, formal logic and/or statistical tools to problems appropriate to their field in a project, paper or performance.

- Students seeking a degree in a quantitatively based or quantitatively relevant field articulate and/or undertake multiple appropriate applications of quantitative methods, concepts and theories within their field of study.

Communication fluency

At the associate level, the student

- Presents substantially error-free prose in both argumentative and narrative forms to general and specialized audiences.

At the bachelor's level, the student

- Constructs sustained, coherent arguments and/or narratives and/or explications of technical issues and processes, in two media, to general and specific audiences.

- In a language other than English, and either orally or in writing, conducts an inquiry with a non-English-language source concerning information, conditions, technologies and/or practices in his or her major field.

- With one or more oral interlocutors or collaborators, advances an argument or designs an approach to resolving a social, personal or ethical dilemma.

At the master's level, the student

- Creates sustained, coherent arguments or explanations and reflections on his or her work or that of collaborators (if applicable) in two or more media or languages, to both general and specialized audiences.

APPLIED LEARNING

An emphasis on Applied Learning suggests that what graduates can *do* with what they know is the most critical outcome of higher education. The presentation of illustrative learning outcomes in this section properly underscores the interaction of academic and non-academic settings and the corresponding integration of theory and practice. Research of different kinds and intensities and "field-based" experiences (internships, practicums, community and other service-learning) all are cases of applied learning that may be found in the outcomes articulated below. Again, each degree level assumes and builds on competencies acquired at the previous degree level.

At the associate level, the student

- Describes in writing at least one substantial case in which knowledge and skills acquired in academic settings are applied to a challenge in a non-academic setting; evaluates, using evidence and examples, the learning gained from the application; applies that learning to the question; and analyzes at least one significant concept or method related to his or her course of study in light of learning outside the classroom.

- Locates, gathers and organizes evidence on an assigned research topic addressing a course-related question or a question of practice in a work or community setting; offers and examines competing hypotheses in answering the question.

At the bachelor's level, the student

- Presents a discrete project, paper, exhibit or performance, or other appropriate demonstration that links knowledge and/or skills acquired in work, community and/or research activities with knowledge acquired in one or more disciplines; explains in writing or another medium how those elements were combined in the product to shape its intended meaning or findings; and employs appropriate citations to demonstrate the relationship of the product to literature in its field.

- Formulates a question on a topic that addresses more than one academic discipline or practical setting, locates appropriate evidence that addresses the question, evaluates the evidence in relation to the problem's contexts, and articulates conclusions that follow logically from such analysis.

- Completes a substantial field-based project related to his or her major course of study; seeks and employs insights from others in implementing the project; evaluates a significant challenge or question faced in the project in relation to core concepts, methods or assumptions in his or her major field; and describes the effects of learning outside the classroom on his or her research or practical skills.

At the master's level, the student

- Creates a discrete project, paper, exhibit, performance or other appropriate demonstration reflecting the integration of knowledge acquired in practicum, work, community, and/or research activities with knowledge and/or skills gleaned from at least two academic disciplines in different segments of the curriculum (e.g., computer science and anthropology); fully documents the sources of the knowledge and/or skills reflected in the integration; articulates in writing how these elements influenced the resulting product; and assesses the significance of the work in light of major debates or developments in the student's primary field(s).

- Creates, designs and implements a project or performance in an out-of-class setting that requires the application of advanced knowledge gained in the program to a practical challenge; articulates in writing or another medium the insights gained from the field experience; assesses, with appropriate citations, selected approaches and/or scholarly debates

applicable to the problem; articulates a reasoned judgment on selected issues encountered in the field; and assesses his or her own standards for professional performance and continuing development with specific reference to the experience.

CIVIC LEARNING

The objectives of Civic Learning rely considerably on students' out-of-classroom experiences and their development of a capacity for analysis and reflection. Both knowledge and a commitment to action are necessary for the development of Civic Learning, a co-curricular juxtaposition that may challenge traditional higher education learning outcomes.

The illustrative outcomes articulated below rely principally on the types of cognitive activities (describing, examining, elucidating, justifying) that are within the direct purview of institutions of higher education, but they also include evidence of civic activities and learning beyond collegiate settings. These outcomes also reflect the need for analytic inquiry and engagement with diverse perspectives. Together, they underscore the interplay of competencies from the major components of higher learning presented in this Degree Profile.

At the associate level, the student

- Describes his or her own civic and cultural background, including its origins and development, assumptions and predispositions.
- Describes diverse positions, historical and contemporary, on selected democratic values or practices, and presents his or her own position on a specific problem where one or more of these values or practices are involved.
- Takes an active role in a community context (work, service, co-curricular activities, etc.), and examines the civic issues encountered and the insights gained from the community experience.

At the bachelor's level, the student

- Explains diverse positions, including those of different cultural, economic and geographic interests, on a contested issue, and evaluates the issue in light of both those interests and evidence drawn from journalism and scholarship.
- Develops and justifies a position on a public issue and relates the position taken to alternative views within the community/policy environment.
- Collaborates with others in developing and implementing an approach to a civic issue, evaluates the strengths and weaknesses of the process and, where applicable, the result.

At the master's level, the student

- Assesses and develops a position on a public policy question with significance in the student's own field, taking into account both scholarship and published positions and narratives of relevant interest groups.

The Degree Profile matrix

A Degree Profile illustrates what students are expected to know and do across different degree levels. Such frameworks are usually presented in a table or matrix that arrays an ascending sequence of credentials (e.g., associate, bachelor's, master's) on one axis, and specific areas of knowledge or performance (e.g., written communication, use of specialized tools, using data) on the other axis.

Cells in the table contain specific descriptions of the competency expected at that level and in that area. When read on one axis, the framework describes ascending competencies in a given area at increasingly higher award levels. When read on the other axis, the framework describes all of the competencies across areas required for a given degree.

This Degree Profile offers a framework of specific student learning outcomes intended to transcend arbitrary distinctions between the pursuit of degrees in the arts and sciences and those in applied and professional fields. They benchmark the associate, bachelor's and master's degrees, regardless of a student's field of specialization. These degrees constitute most of the degrees granted by U.S. institutions of higher education. Doctorates are not included at this time because of their emphasis on advanced research skills specific to individual disciplines. Medicine, law and other such degrees are also excluded because of their exclusive focus on advanced practice knowledge and skills. Such degrees may be addressed at a later stage.

Please note the following: (1) For better readability, the competency statements contained in this grid are reduced versions of the full statements presented on Pages 9-16. (2) Each degree level assumes expectations already articulated. In other words, expectations at the bachelor's degree level *include* those listed for the associate degree. (3) Specific tasks or assignments are cited in the competency statements only as illustrative examples. (4) Within the column headed "Intellectual Skills," expectations are further categorized according to five broad categories as indicated in parentheses at the end of each item.

The Degree Profile matrix

AREAS OF LEARNING

	Specialized Knowledge Knowledge acquired in a specialized field of study	Broad, Integrative Knowledge Knowledge acquired in general education fields
At the Associate level, the student	Describes the scope and principal features of the field of study, citing core theories and practices, and offers a similar explication of a related field. Illustrates the field's current terminology. Generates substantially error-free products exhibits, or performances in the field.	Describes how existing knowledge or practice is advanced, tested and revised. Describes and examines perspectives on key debates within the field and in society. Illustrates core concepts of the field while executing analytical, practical or creative tasks. Selects and applies recognized methods in interpreting discipline-based problems. Assembles evidence relevant to problems, describes its significance, and uses it in analysis. Describes the ways in which at least two disciplines define, address and justify the importance of a contemporary challenge or problem. Identifies, categorizes and distinguishes among ideas, concepts, theories and practical approaches to problems.
At the Bachelor's level, the student	Defines and explains the boundaries, divisions, styles and practices of the field. Defines and properly uses the principal terms in the field, both historical and contemporaneous. Demonstrates fluency in the use of tools, technologies and methods in the field. Evaluates, clarifies and frames a complex question or challenge using perspectives and scholarship from the student's major field and at least one other. Constructs a project related to a familiar but complex problem in the field of study by assembling, arranging and reformulating ideas, concepts, designs or techniques. Constructs a summative project, paper or practice-based performance that draws on current research, scholarship and/or techniques in the field.	Frames a complex scientific, social, technological, economic or aesthetic challenge or problem from the perspectives and literature of at least two academic fields and proposes a "best approach" to the question or challenge using evidence from those fields. Produces, independently or collaboratively, an investigative, creative or practical work that draws on specific theories, tools and methods from at least two academic fields. Explains a problem in science, the arts, society, human services, economic life or technology from the perspective of at least two academic fields, explains how the methods of inquiry and research in those disciplines can be brought to bear, judges the likelihood that the combination of disciplinary perspectives and methods would contribute to the resolution of the challenge, and justifies the importance of the challenge in a social or global context.
At the Master's level, the student	Elucidates the major theories, research methods and approaches to inquiry, and/or schools of practice in the field; articulates relevant sources; and illustrates their relationship to allied fields. Assesses the contributions of major figures and organizations in the field; describes its major methodologies and practices; and implements at least two such methodologies and practices through projects, papers, exhibits or performances. Articulates major challenges involved in practicing the field, elucidates its leading edges, and delineates its current limits with respect to theory, knowledge and practice. Initiates, assembles, arranges and reformulates ideas, concepts, designs and techniques in carrying out a project directed at a challenge in the field beyond conventional boundaries.	Articulates how the field has developed in relation to other major domains of inquiry or practice. Designs and executes an applied, investigative or creative work that draws on the perspectives and methods of other fields and assesses the resulting gains and difficulties. Articulates and defends the significance and implications of his or her specialized work in terms of challenges, trends and developments in a social or global context.

AREAS OF LEARNING

Intellectual Skills

Identifies, categorizes and distinguishes among ideas, concepts, theories and practical approaches to problems. (Analytic inquiry)

Identifies, categorizes and appropriately cites information for an academic project, paper or performance. (Use of information resources)

Describes how cultural perspectives could affect interpretation of problems in the arts, politics or global relations. (Engaging diverse perspectives)

Presents accurate calculations and symbolic operations and explains their use either in the field of study or in interpreting social or economic trends. (Quantitative fluency)

Presents substantially error-free prose in both argumentative and narrative forms to general and specialized audiences. (Communication fluency)

Differentiates and evaluates theories and approaches to complex standard and non-standard problems within his or her major field. (Analytic inquiry)

Incorporates multiple information resources in different media or languages in projects, papers or performances, with appropriate citations; and evaluates the relative merits of competing resources with respect to clearly articulated standards. (Use of information resources)

Constructs a cultural, political or technological alternate vision of either the natural or human world through a written project, laboratory report, exhibit, performance or community service design; defines the distinct patterns in this alternate vision; and explains how these patterns differ from current realities. (Engaging diverse perspectives)

Translates verbal problems into mathematical algorithms, constructs valid arguments using the accepted symbolic system of mathematical reasoning, and constructs accurate calculations, estimates, risk analyses or quantitative evaluations of public information through presentations, papers or projects. (Quantitative fluency)

Constructs sustained, coherent argument or presentation on technical issues or processes in more than one language and in more than one medium for general and specific audiences; and works through collaboration to address a social, personal or ethical dilemma. (Communication fluency)

Disaggregates, adapts, reformulates and employs in an essay or project principal ideas, techniques or methods at the forefront of the field. (Analytic inquiry)

Provides adequate evidence through papers, projects, notebooks, computer files or catalogues of expanding, assessing or refining either a recognized information resource or an information base within the field. (Use of information resources)

Addresses in a project, paper or performance a core issue in the field from the perspective of a different point in time or a different culture, political order or technological context, and elucidates how the perspective contributes to results that depart from current norms, dominant cultural assumptions or technologies. (Engaging diverse perspectives)

Not seeking a degree in a quantitative field employs and applies mathematical, logical or statistical tools to problems within the field in a project, paper or performance, while the student seeking a degree in a quantitative field articulates and undertakes multiple appropriate applications of quantitative methods, concepts and theories. (Quantitative fluency)

Creates sustained, coherent explanations and reflections on the student's own work in two or more media or languages to both general and specialized audiences. (Communication fluency)

Applied Learning

Describes in writing a case in which knowledge and skills acquired in academic settings are applied to a challenge in a non-academic setting; evaluates the learning gained; and analyzes a significant concept or method related to the course of study in light of learning from outside the classroom.

Locates, gathers and organizes evidence on an assigned research topic addressing a course-related question or a question of practice in a work or community setting; offers and examines competing hypotheses in answering the question.

Presents a project, paper, performance or other appropriate task linking knowledge and skills from work, community or research activities with knowledge acquired in academic disciplines; explains how elements were combined to shape meaning or findings; and shows the relationship to relevant scholarship.

Formulates a question on a topic that addresses more than one academic discipline or practical setting, locates appropriate evidence that addresses the question, evaluates the evidence in relation to the problem's contexts, and articulates conclusions that follow logically from analysis.

Completes a field-based assignment in the course of study that employs insights from others; evaluates a significant question in relation to concepts, methods or assumptions in at least one academic field; and explains the implications of learning outside the classroom.

Creates a discrete project, paper, exhibit, performance or other appropriate task reflecting integration of knowledge acquired in practicum, work, community or research activities with knowledge and skills from at least two disciplines representing different segments of the curriculum (e.g., computer science and anthropology); documents the sources of the knowledge and skills reflected in the integration; articulates in writing how these elements influenced the resulting product; and assesses the significance of the work in light of major debates or developments in the primary field(s).

Creates, designs and implements a performance or project in an out-of-class setting requiring application of advanced knowledge to a practical challenge; articulates insights gained from the field experience; assesses, with appropriate citations, selected approaches or scholarly debates applicable to the problem; articulates a reasoned judgment on selected issues in the field; and assesses standards for professional performance and continuing development with specific reference to the experience.

AREAS OF LEARNING

Civic Learning

Describes his or her own civic and cultural background, including origins, development, assumptions and predispositions.

Describes historical and contemporary positions on democratic values and practices, and presents his or her position on a related problem.

Takes an active role in the community (work, service, co-curricular activities) and examines civic issues encountered and insights gained.

Explains diverse perspectives on a contested issue and evaluates insights gained from different kinds of evidence reflecting scholarly and community perspectives.

Develops and justifies a position on a public issue and relates this position to alternative views within the community or policy environment.

Collaborates in developing and implementing an approach to a civic issue, evaluates the process and, where applicable, weighs the result.

Assesses and develops a position on a significant public policy question in the student's field, taking into account scholarly and community perspectives.

Institution-specific areas

(Users of the Degree Profile matrix should use this column to list other areas of learning they wish to include.)

Sources consulted

ABET (Accreditation Board for Engineering and Technology) (2008). *Criteria for accrediting engineering programs*. Baltimore, MD: Author.

ACGME (Accreditation Council for Graduate Medical Education) (2007). *Common program requirements: General competencies*. Chicago, IL: Author.

Adam, S. (2004). *Using learning outcomes: A consideration of the nature, role, application, and implications for European education of employing "learning outcomes" at the local, national, and international levels*. Retrieved from http://www.scotland.gov.uk/library5/lifelong/tehea-00.asp

Adam, S. (2007a). *New challenges in recognition: The recognition of prior learning.* Paper for the Official Bologna Process Seminar, Riga, Latvia, January 24-26, 2007.

Adam, S. (2007b). *Report based on the analysis of individual country 2007 Stocktaking Submissions on the Implementation of National Qualifications Frameworks.* Strasbourg, Fr: Council of Europe. Retrieved from http://www.coe.int/t/dg4/highereducation/qf/DGIVEDUHE_2007_37_EN.pdf

Adelman, C. (2008). *Learning accountability from Bologna: A higher education policy primer.* Washington, D.C.: Institute for Higher Education Policy.

Adelman, C. (2009). *The Bologna Process for U.S. eyes: Relearning higher education in the age of convergence.* Washington, D.C.: Institute for Higher Education Policy.

Admodt, P. & Hovdhaugen, E. (2008). *Assessing higher education learning outcomes as a result of institutional and individual characteristics.* Paper for the General Conference of the Programme on Institutional Management in Higher Education. Paris: OECD.

Albertine, S. & Henry, R. J. (2004). Quality in undergraduate education: A collaborative project. *Liberal Education, 90(*3), 46-53.

Allais, S., Raffe, D., & Young, M. (2009). *Researching NQFs: Some conceptual issues*. Employment Working Paper No. 44. International Labour Office, Employment Sector, Skills and Employability Department.

American Association of State Colleges and Universities. (1984). *In pursuit of degrees with integrity: A value added approach to undergraduate assessment*. Washington, D.C.: Author.

American Council on Education (2004, April). *Public accountability for student learning in higher education: Issues and options.* A position paper from the Business-Higher Education Forum.
Retrieved from http://www.bhef.com/publications/documents/public_accountability_04.pdf

Association Europeene des Conservatoires, Académies de Musique et Musikhochschulen (AEC). (2007). *Summary of Tuning findings: Higher music education.* Utrecht, NL: Author.

Association of American Colleges. (1982). *A search for quality and coherence in Baccalaureate education.* Project on Redefining the Meaning and Purpose of Baccalaureate Degrees. Washington, D.C.: Author.

Association of American Colleges and Universities. (2002). *Greater expectations: A new vision for learning as a nation goes to college.* Washington, D.C.: Author.

Association of American Colleges and Universities. (2004). *Taking responsibility for the quality of U.S. degrees. A report from the Greater Expectations Project on Accreditation and Assessment.* Washington, D.C.: Author.

Association of American Colleges and Universities. (2007). *College learning for the new global century: A report from the National Leadership Council for Liberal Education and America's Promise.* Washington, D.C.: Author.

Association of American Colleges and Universities. (2010). *The quality imperative: Match ambitious goals for college attainment with an ambitious vision for learning*. Washington, D.C.: Author.

Association of American Colleges and Universities and Council for Higher Education Accreditation (2010). *New leadership for student learning and accountability*. Washington, D.C.: Author.

Astin, A.W. (1978). *Four Critical Years.* San Francisco: Jossey-Bass.

Australian Qualifications Authority. (2007). *AQF Implementation Handbook* (4th ed.). Retrieved from http://www.aqf.edu.au/implem.htm

Australian Qualifications Framework Council. (2009, September). *Strengthening the AQF: An architecture for Australia's qualifications. A consultation paper.* Retrieved from www.aqf.edu.au

Australian Qualifications Framework Council (2010, July). *Strengthening the AQF: A framework for Australia's qualifications.* Retrieved from www.aqf.edu.au

Barr, R. B. & Tagg, J. (1995). From teaching to learning: A new paradigm for undergraduate education. *Change, 27*(6), 13-25.

Bartosch, U. (2008). Bringing transparency to the faculties? The Qualifications Frameworks in action. In HRK (German Rectors Conference) *Educating for a Global World: Reforming German Universities Toward the European Higher Education Area.* Bonn, DE, pp. 18-19.

Baume, D. (2009). *Writing and Using Good Learning Outcomes*. Leeds, UK: Leeds Metropolitan University.

Bergan, S. & Damian, R. (eds.). (2010). *Higher Education for Modern Societies — Competences and Values.* Strasbourg, FR: Council of Europe.

Bjornavold, J. & Coles, M. (2010). *Added value of national qualifications frameworks in implementing the EQF [European Qualifications Framework]*. Luxembourg: Publications Office of the European Union.

Blaich, C., & Wise, K. (2009). *Overview of findings from the first year of the Wabash National Study of Liberal Arts Education.* Crawfordsville, Indiana: Center of Inquiry in the Liberal Arts at Wabash College. Retrieved from http://www.liberalarts.wabash.edu/storage/Overview_of_Findings_from_the_First_Year_web_07.17.09.pdf

Bloch, R. & Bürqi, H (2008). *2008 Swiss Catalogue of Learning Objectives for Undergraduate Medical Training (*2nd ed.). Bern, CH: Institute for Medical Education.

Bloom, B. S. (1956). *A Taxonomy of Educational Objectives.* Chicago: University of Chicago Press.

BMBF (German Federal Ministry of Education and Research) and KMK (Standing Conference of the Ministers of Education and Cultural Affairs of the Länder of the Federal Republic of Germany). (2008). *Report on the compatibility of the "Qualifications Framework for German Higher Education Qualifications" with the "Qualifications Framework for the European Higher Education Area."* Bonn, DE: Authors.

Bologna Process Coordination Group for Qualifications Frameworks. (2009). *Synthesis of the replies received from national QF correspondents.* Strasbourg, FR: Author.

Bologna Process Working Group on Qualifications Frameworks. (2007). *National Qualifications Frameworks Development and Certification.* Retrieved from http://www.ond.vlaanderen.be/hogeronderwijs/bologna/documents/WGR2007/WGQF-report-final2.pdf

Bologna Working Group on Qualifications Frameworks. (2005). *A framework of qualifications of the European higher education area*. Copenhagen: Ministry of Science, Technology and Innovation. Retrieved from http://www.bologna-bergen2005.no/Docs/00-Main_doc/050218_QF_EHEA.pdf

Bowen, H.R. (1983). *Investment in Learning*. San Francisco: Jossey-Bass.

Bundesministerium für Bildung, Wissenschaft und Kultur. (2004). *Terminologiewörterbuch Hochschulwesen.* Band I: Deutsch. Wein (AT): Author.

California State University. (1999). Learning outcomes for mathematical reasoning for the Baccalaureate degree. *Learning Outcomes Project Final Report, January 15, 1999*. Los Angeles: Author.

Chickering, A. W. & Gamson, Z. S. (1987, March). Seven principles for good practice in undergraduate education. *AAHE Bulletin*, *39(7*), 3–7.

Coles, M. (2006). *A review of international and national developments in the use of qualification frameworks.* Turin, Italy: European Training Foundation. Retrieved from http://www.etf.europa.eu/pubmgmt.nsf/%28getAttachment%29/4B4A9080175821D1C12571540054B4AF/$File/SCAO6NYL38.pdf

Committee on Information Technology Literacy. (1999). *Being Fluent with Information Technology.* National Research Council. Washington, D.C.: National Academy Press.

Council for Higher Education Accreditation (CHEA). (2003, September). *Statement of mutual responsibilities for student learning outcomes: Accreditation, institutions, and programs*. Retrieved from http://www.chea.org/pdf/StmntStudentLearningOutcomes9-03.pdf

Council for Higher Education Accreditation (CHEA). (2006, December). *Accreditation and accountability: A CHEA special report*. Retrieved from http://www.chea.org/pdf/Accreditation_and_Accountability.pdf

Council of Ministers of Education, Canada. (2007). *Ministerial statement on quality assurance of degree education in Canada.* Retrieved from www.cmec.ca

Council of the European Union. (2007). Bologna Seminar: Higher Education Forum on Qualifications Frameworks: Recommendations. Strasbourg, FR: Author. Retrieved from http://www.coe.int/t/dg4/highereducation/QF/Recommendations_QF_Stras1007_EN.pdf

Danish Bologna Follow Up Group. (2003). *Towards a Danish "Qualifications Framework" for higher education.* Copenhagen, DK: Author.

de Bruin *et al.* (2007). *Competences in Education and Cross-Border Recognition: Evaluation of the Usefulness of Learning Outcomes and Competences for International Recognition.* The Hague, NL: NUFFIC.

Dillon, S. (2010, June 3). States receive a reading list: New standards for education. *The New York Times,* p. A14.

Driscoll, A., & Wood, S. (2007). *Outcomes-based Assessment for Learner-centered Education*. Sterling, VA: Stylus.

Erwin, T. D. (1991). *Assessing Student Learning and Development*. San Francisco: Jossey-Bass.

European Center for the Development of Vocational Training (Cedefop). (2008a). *Terminology of European education and training policy: A selection of 100 key terms* [in six languages]. Luxembourg: Office for Official Publications of the European Communities.

European Center for the Development of Vocational Training (Cedefop). (2008b). *The shift to learning outcome: Conceptual, political and practical developments in Europe.* Luxembourg: Office for Official Publications of the European Communities. Retrieved from http://www.cedefop.europa.eu/EN/publications/12952.aspx

European Students Union (ESU). (2004). *Policy paper: Qualification Frameworks.* Tallinn, Estonia: Author.

Ewell, P.T. (2003). *Information on student outcomes: How to get it and how to use it.* Boulder, CO: National Center for Higher Education Management Systems (NCHEMS).

Ewell, P.T. (2004). *The self-regarding institution*. Boulder, CO: National Center for Higher Education Management Systems (NCHEMS).

Ewell, P. T. (2009, November). *Assessment, accountability and improvement: Revisiting the tension.* National Institute for Learning Outcomes Assessment (NILOA). Retrieved from http://www.learningoutcomeassessment.org/documents/PeterEwell_006.pdf

Farmer, D. W. (1988). *Enhancing student learning: Emphasizing essential competencies in academic programs*. Wilkes-Barre, PA: King's College.

Gallacher, J., Toman, N., Caldwell, J., Edwards, R., & Raffe, D. *(*2005). *Evaluation of the impact of the Scottish Credit and Qualifications Framework (SCQF).* Edinburgh: Scottish Executive**.** Retrieved from http://www.scotland.gov.uk/Publications/2005/11/30173432/34323

Gaston, P. L. (1991). Measuring the Marigolds: Literary studies and the opportunity of outcomes assessment. *The Journal of the Midwest Modern Language Association, 24(*2), 11-20.

Gaston, P. L. (1994, Summer). The Dean as Odysseus: Sailing the academic seas in an age of accountability. *Humanities in the South, 78*, 1-3.

Gaston, P. L. (2004). Reading reauthorization: Lessons for tomorrow in yesterday's debate. *Metropolitan Universities*, *15(*4), 38-50.

Gaston, P. L. (2008). Bologna: A challenge for liberal education and an exceptional opportunity. *Liberal Education, 94(*4), 14-19.

Gaston, P. L. (2010a). *General education & liberal learning: Principles of effective practice.* Washington, D.C.: American Association of Colleges and Universities.

Gaston, P. L. (2010b). *The Challenge of Bologna: What U.S. Higher Education Has to Learn from Europe and Why It Matters That We Learn It*. Sterling, VA: Stylus Publishers.

Gaston, P. L. & Gaff, J. G. (2009). *Revising general education — and avoiding the potholes.* Washington, D.C.: Association of American Colleges and Universities.

Gehmlich, V. (2008). *Die Einführung eines Nationalen Qualifikationsrahmens in Deutschland: Untersuchung der Möglichkeiten für den Bereich des formalen Lernens.* Bonn, DE: Bundesministerium für Bildung und Forschung.

González, J. & Wagenaar, R. (2005). *Tuning Educational Structures in Europe II*. Bilbao, ES: University of Deusto.

Grant G., Elbow, P., Ewens, T., Gamson, Z., Kohli, W., Neumann, W., Olesen, V., & Riesman, D. (1979). *On Competence: A Critical Analysis of Competence-based Reforms in Higher Education.* San Francisco: Jossey-Bass.

Hart Research Associates. (2007). *How should colleges prepare students to succeed in today's global economy?* Washington, D.C.: Author.

Hart Research Associates. (2008). *How should colleges assess and improve student learning? Employers' views on the accountability challenge*. Washington, D.C.: Author. Retrieved from https://www.aacu.org/leap/documents/2008_Business_Leader_Poll.pdf

Hart Research Associates. (2009). *Trends and emerging practices in general education*. Washington, D.C.: Author. Retrieved from www.aacu.org/membership/documents/2009MemberSurvey_Part2.pdf

Hart Research Associates. (2010). *Raising the bar: Employers' views on college learning in the wake of the economic downturn*. Washington, D.C.: Author. Retrieved from http://www.aacu.org/leap/documents/2009_EmployerSurvey.pdf

Hersh, R. H. (2004). *Assessment and accountability: Unveiling the student learning factor in higher education.* A presentation to the AAHE National Assessment Conference, June 2004. Retrieved from http://www.teaglefoundation.org/learning/pdf/200406_hersh.pdf

Hersh, R. H., Bundick, M., Keeling, R., Keyes, C., Kurpius, A., Shavelson,R., Silverma, D., & Swaner, L. (2008). *A well-rounded education for a flat world: A paper prepared by the College Outcomes Project.* Washington, D.C.: S. Engelhard Center. Retrieved from http://www.aacu.org/bringing_theory/documents/AWELLROUNDED-finalmasterFOOTNOTESINSERTEDnarrativecitationsA_Well-rounded-sept_25_Kurpiu_000.doc

Higher Education and Training Awards Council, Ireland (HETAC). (2004). *Policy and criteria for the making of higher education and training awards.* Dublin, Ireland: Author.

Internet Resources for Higher Education Assessment: http://www2.acs.ncsu.edu/UPA/assmt/resource.htm

[Irish] University Sector Framework Implementation Network. *University awards and the National Framework of Qualifications (NFQ): Issues around the design of programmes and the use and assessment of learning outcomes.* Dublin, IE: Author.

James, R. & Meek, L. (2008). *Proposal for an Australian Higher Education Graduation Statement: Final report to the Department of Education, Employment and Workplace Relations*. Melbourne, AU: Centre for the Study of Higher Education.

Johnstone, S. M., Ewell, P., & Paulson, K. (2002). *Student learning as academic currency*. Washington, D.C.: American Council for Higher Education (ACE).

Jones, E. A. (1995). *National assessment of college student learning: Identifying college graduates' essential skills in writing, speech and listening, and critical thinking.* Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.

Khayat, J., Dif, M., Alsace, B. C., Kelly, C., Kadlec, M., Stalker, M., & T tlys, V. (2009). *Guidelines for the application of National Qualifications Frameworks and the European Qualifications Framework in the inter-county comparison of sectoral qualifications.* Kaunas, Lithuania: Vytautas Magnus University. Retrieved from http://www.nqai.ie/documents/SECCOMPATGUIDELINES_Final_Report_Jan2010.pdf

Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter*. Washington, D.C.: Association of American Colleges and Universities.

Kuh, G. & Ikenberry, S. (2009). *More than you think, less than we need.* Champaign, IL: National Institute for Learning Outcomes Assessment.

Leskes, A. & Miller, R. (2006). *Purposeful pathways: Helping students achieve key learning outcomes.* Washington, D.C.: Association of American Colleges and Universities.

Loboda, Z. & Krémó, A. (2008). *Linking European and national qualification frameworks — processes in Hungary.* Budapest, HU: Ministry of Education and Culture.

Malta Qualifications Council. (2009). *Referencing of the Malta Qualifications Framework (MQF) to the European Qualifications Framework (EQF) and the Qualifications Framework of the European Higher Education Area (QF/EHEA).* Malta: Author.

Massachusetts Board of Regents of Higher Education. *Student Learning Outcomes Statements.* Retrieved from http://www.mass.edu/documents/BHE10-02AcceptanceoftheFinalReportfromtheCommissionersAdvisoryGrouponUndergraduateEducation.pdf

McKiernan, H. H. & Birtwistle, T. (2010). Making the implicit explicit: Demonstrating the value added of higher education by a qualifications framework. *Journal of College and University Law*, *36(*2), 511-564.

Meijers, A.W.M., van Overveld, C.W.A.M., & Perrenet, J.C. (2005). *Criteria for academic Bachelor's and Master's curricula.* Eindhoven, NL: Technische Universiteit Eindhoven.

Miami Dade College. *Student Learning Outcomes Statements*. Retrieved from http://www.mdc.edu/learningoutcomes/outcomes.aspx

Miller, M. A. (2008). The Voluntary System of Accountability—origins and purposes: An interview with George Mehaffy and David Shulenberger. *Change, 40(*4), 8-13.

Ministére de l'Enseignement Supérieur et de la Recherche [MEN]. (2005). *Programme Pédagogique de National du DUT: "Information - communication": Présentation de la formation.* Paris: Author.

Ministére de l'Enseignement Supérieur et de la Recherche [MEN]. (2006). *Programme Pédagogique de National du DUT*: *"Carrières juridiques": Présentation de la formation*. Paris: Author.

Ministry of Education, Culture and Science [OCW]. (2008). *[Draft] Self-certification of the Higher Education Qualifications Framework in the Netherlands.* The Hague: Author.

Moon, J. (2002). *The Module and Programme Development Handbook*. London, England: Kogan Page.

National Governors Association. (2010). *Compete to complete.* Washington, D.C.: Author. Retrieved from http://www.subnet.nga.org/ci/1011/

National Governors Association and the Council of Chief State School Officers (2010). *The Common Core State Standards*. Washington, D.C.: Authors. Retrieved from http://corestandards.org/

National Governors Association Center for Best Practices (2007, February 23). *Issue brief: Higher education accountability for student learning.* Washington, D.C.: Author. Retrieved from http://www.nga.org/Files/pdf/0702HIGHERED.PDF

National Governors Association Center for Best Practices. (2009, November 9). *Measuring student achievement at postsecondary institutions.* Washington, D.C.: Author. Retrieved from http://www.nga.org/Files/pdf/0911MEASURINGACHIEVEMENT.PDF

National Qualifications Authority of Ireland. (2009). *Referencing of the Irish National Framework of Qualifications (NFQ) to the European Qualifications Framework for lifelong learning.* Dublin, IE: Author.

National Qualifications Authority of Ireland. (2010). *National Qualifications Frameworks and the European Overarching Frameworks: Supporting lifelong learning in European education and training*. Dublin, IE: Author.

Ontario Qualifications Framework. (2009). Retrieved from www.edu.gov.on.ca/eng/general/postsec/oqf.pdf

Palomba, C. A. & Banta, T. W. (1999). *Assessment Essentials: Planning, Implementing, and Improving Assessment in Higher Education*. San Francisco: Jossey-Bass.

Pulley, J. (2010). The data drive. *Lumina Foundation Focus,* Spring 2010, 3-13.

Quality Assurance Agency for Higher Education. (2007a). *Benchmark statements: Accounting*. Retrieved from www.qaa.ac.uk/academicinfrastructure/benchmark/statements/Accounting.pdf

Quality Assurance Agency for Higher Education. (2007b). *Benchmark statements: History*. Retrieved from www.qaa.ac.uk/academicinfrastructure/benchmark/statements/history07.pdf

Quality Assurance Agency for Higher Education. (2008). *The Framework for Higher Education Qualifications in England, Wales and Northern Ireland.* Gloucester, UK: Author.

Rhodes, T. (ed.). (2010). *Assessing outcomes and improving achievement: Tips and tools for using rubrics.* Washington, D.C.: Association of American Colleges and Universities.

Rychen, D.S. & Salganik, L.H. (ed.). (2003). *Key competencies for a successful life and a well-functioning society.* Report of the OECD DeSeCo (definition of competences) project, OECD, Paris. Retrieved from http://www.oecd.org/dataoecd/47/61/35070367.pdf

Schermutski, M. and Peters-Burns. (2004), A. *Empfehlungen zur Anwendung des ECTS-System als Transfer- und Akkumulierungssystem im Rahmen der Umstellung auf Bachelor- und Masterabschlüsse an der FH Aachen.* Aachen, DE, *Fachhochschule Aachen.*

Scottish Executive. (2001). *An introduction to the Scottish Credit and Qualifications Framework.* Edinburgh: Author.

Shared "Dublin" descriptors for Short Cycle, First Cycle, Second Cycle and Third Cycle Awards, October 18, 2004. Retrieved from http://www.eua.be/fileadmin/user_upload/files/EUA1_documents/dublin_descriptors.pdf

Stark, J. S. & Lowther, M. A. (1988). *Strengthening the ties that bind: Integrating undergraduate liberal and professional study.* Report of the Professional Preparation Network. University of Michigan, Ann Arbor, MI.

State Council of Higher Education for Virginia: *Core Competencies*. Retrieved from http://research.schev.edu/

State Higher Education Executive Officers (SHEEO). (2005). *Accountability for better results: A national imperative for higher education*. A National Commission on Accountability in Higher Education, March 10, 2005. Retrieved from http://www.sheeo.org/account/accountability.pdf

Steen, L. A. (2001). *Mathematics and democracy: The case for quantitative literacy*. Princeton, NJ: National Committee on Education and the Disciplines.

Study Group on the Conditions of Excellence in American Higher Education (1984). *Involvement in learning: Realizing the potential of American higher education*. Washington, D.C.: U.S. Department of Education.

The Danish Evaluation Institute. (2009): *Self-certification: Verification of compatibility of the Danish National Qualifications Framework for Higher Education with the Framework for Qualifications of the European Higher Education Area*. Copenhagen, DK: Author. Retrieved from http://www.ond.vlaanderen.be/hogeronderwijs/bologna/qf/documents/DK-QF-report-EN.pdf

The Secretary's Commission on Achieving Necessary Skills (1991). *What work requires of schools. A SCANS report for America 2000.* U.S. Department of Labor, Washington, D.C. Retrieved from http://wdr.doleta.gov/SCANS/whatwork/whatwork.pdf

Tuck, R. (2007). *An introductory guide to national qualification frameworks: Conceptual and practical issues for policy makers.* Skills and Employability Department, International Labour Office (ILO). Geneva, CH. Retrieved from http://www.ilo.org/wcmsp5/groups/public/—-ed_emp/—-ifp_skills/documents/instructionalmaterial/wcms_103623.pdf

Tuning USA Indiana Committee. (2010). *Tuning USA Indiana final report*. Indianapolis, IN: Author.

Tuning USA Minnesota Committee. (2010). *Tuning USA Minnesota final report*. St. Paul, MN: Author.

Tuning USA Utah Committee. (2010). *Tuning USA Utah final report*. Salt Lake City, UT: Author.

Université Jean Monnet. (2007). *Renouvellement d'un diplôme de LICENSE généraliste: Géosciences et Environnement*. Saint-Etienne, FR: Author.

University of Wisconsin. *Student Learning Outcomes Statements*. Retrieved from http://www.provost.wisc.edu/content/WI_Exp_ELOs.pdf.

Wabash National Study of Liberal Arts Education. (2009). *High-Impact practices and experiences from the Wabash National Study*. Crawfordsville, Indiana: Center of Inquiry in the Liberal Arts at Wabash College.

Whitaker, U. (1989). *Assessing learning: Standards, principles, and procedures*. Philadelphia, PA: Council for Adult and Experiential Learning (CAEL).

Lumina™
FOUNDATION