

**BOARD OF HIGHER EDUCATION
REQUEST FOR BOARD ACTION**

NO.: BHE 10-02

BOARD DATE: December 8, 2009

**ACCEPTANCE OF THE FINAL REPORT FROM THE COMMISSIONER'S ADVISORY
GROUP ON UNDERGRADUATE EDUCATION**

MOVED: The Board of Higher Education hereby accepts the Final Report from the Commissioner's Advisory Group on Undergraduate Education.

Authority: Massachusetts General Laws Chapter 15A, Sections 6 and 9(c)

Contact: Dr. Francesca Purcell, Associate Commissioner, Academic and P-16 Policy



Massachusetts Board of Higher Education

Final Report from the
**Commissioner's Advisory
Group on Undergraduate
Education**

December 2009

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*This report is also available on the Massachusetts Department of Higher
Education's website (www.mass.edu).*

Massachusetts Board of Higher Education
Final Report from the Commissioner's Advisory Group on Undergraduate Education
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I. Introduction

Today, even more than in the past, the Commonwealth's public higher education institutions should have clear expectations and definitions about what college undergraduates should know and be able to do upon graduation. As a knowledge economy competing in the global market, the Commonwealth is dependent upon the quality and ability of its college graduates more so than many other states. And in the state's economy, the majority of jobs in the high-growth sectors require college degrees. The public campuses educate approximately 68 percent of Massachusetts residents who attend college within the state, and this percentage is steadily increasing. Thus, the campuses must be pace setters in, among other areas, the level of knowledge and skill attained by students at our campuses.

Public and private colleges and universities across the state are working diligently to identify and implement best practices related to student learning. And while this report focuses on public higher education institutions, it should be underscored that Massachusetts requires every student in this state—from both public and private institutions at all levels—to be educated to the maximum possible level as the economy is increasingly dependent on knowledge, technology and innovation. The hope is that this report will prompt a statewide dialogue across all campuses around shared expectations for student learning.

National Status of Student Learning Outcomes

Higher education has been increasingly involved in student assessment efforts over the past decade. Mostly individual college campuses across the country have spearheaded these efforts although some states, such as Missouri and Texas, have approached this endeavor across their state systems of higher education. Regional higher education accreditation organizations have also influenced much of this work through an increase in attention and resources to the assessment of student learning. In addition to campus and statewide efforts, national and international examples include the Association of Public and Land-grant Universities and the Association of State Colleges and Universities' Voluntary System of Accountability project supplying comparable information on undergraduate experiences; the National Forum on College-Level Learning initiative comparing student academic performance across five states; the American Association of Colleges & Universities' work on defining aims and outcomes of a twenty-first-century college education (entitled *Liberal Education and America's Promise*); and The Bologna Process, an international initiative based on cooperation between ministries, higher education institutions, students and staff from 46 countries in the European Union. Most recently, three U.S. states are participating in a pilot program using elements of The Bologna Process to define and assess student learning outcomes.

Student Learning Outcomes in Massachusetts

The national and statewide focus on what students need to learn and how well they are learning has been well underway at the K-12 level, particularly in Massachusetts since the landmark Education Reform Act of 1993. Massachusetts' public higher education institutions are actively involved in defining and assessing student learning outcomes. Notwithstanding this work, the variability of approaches precludes institutional and state comparisons which would help stakeholders understand how well Massachusetts college students are learning. Taking into consideration the significant economic, technological, and global changes in the recent past as well as the need to include Massachusetts higher education more robustly in national and state assessment initiatives, the Massachusetts Board of Higher Education (BHE) passed a motion in November 2008 establishing a task force to make recommendations on the competencies needed by college graduates for contemporary and future career and citizenship challenges and demands (Appendix A). The state needs to define a contemporary set of student learning outcomes as a starting point toward the goal that graduates are prepared fully with the knowledge and skills required for success in an increasingly complex and competitive world.

The Commissioner's Advisory Group on Undergraduate Education

Board of Higher Education Chair Charles F. Desmond appointed a diverse group of fourteen key state leaders in business, government, non-profit and community organizations, and higher education to serve on the Commissioner's Advisory Group on Undergraduate Education (Appendix B). The Advisory Group represented a wide range of Massachusetts employer and citizen perspectives from significant industries in the state including health and science, technology, law, social services, religious organizations, and education.

The Advisory Group was charged with developing a cogent list of essential cross-cutting knowledge areas and skills that all students, regardless of major, should acquire during their undergraduate careers. The members of the Advisory Group approached the charge as employers and citizens—not as specialists in academic content areas. While higher education representatives provided important context and background, special emphasis was accorded to employer and citizen voices. The Advisory Group was further charged with making recommendations on how to use this framework to guide future Board of Higher Education decisions.

To come to its conclusions, the Advisory Group met on a regular basis drawing upon a wide range of readings as well as individual experience and expertise (Appendix C). Members sought to contribute the best guidance possible about the workplace requirements of the state and global economy and about issues beyond the workplace, touching on the qualities most valued in the human community. Extensive discussion and debate took place, with Advisory Group members expressing a deep interest in the quality and direction of the Commonwealth's higher education system. While the Advisory Group discussed the variability of the quality of skills found in new employees,

there was also optimism about the Commonwealth's labor force and a belief that with more transparent, shared definitions of the skills and knowledge areas needed for the 21st century, graduates could be even better prepared.

II. Student Learning Outcomes

The student learning outcomes below express the aspirations and ideals of the Advisory Group for the Commonwealth's students.

Most important, mastery of disciplinary and inter-disciplinary content and intellectual skills should continue to be the priority for all college graduates.

However, the knowledge and skills students learn in college should expand beyond disciplinary-based content and intellectual skills. Graduates must also acquire the skills and attitudes which allow them to think and act successfully for today's career and civic challenges. The Advisory Group also noted that expectations will vary depending upon the level of the institution (e.g. community colleges or state colleges/University of Massachusetts campuses).

The student learning outcomes are loosely grouped together into three categories: *College Level Fundamentals*, *Integrative Thinking*, and *Civic, Organizational, and Career Competencies*. However, there are significant connections across the categories and Advisory Group members—particularly those providing employer and civic perspectives—recognize that the categories are interrelated. For example, students can only practice integrative thinking drawing on the college-level fundamentals they are learning.

Advisory Group members recognize that to expect higher education alone to produce all the learning outcomes specified is a great deal to ask. Nonetheless, the Advisory Group agreed that higher education should address outcomes beyond general education and the knowledge in depth gained in an academic major—its core responsibility. The group was especially passionate about three outcomes: well-honed written and oral communication skills, knowledge and practice of ethical behavior, and the ability to perform effectively in teams. These goals are of particular importance today. It is important to note that the Advisory Group members also believe that achieving these learning outcomes may have implications for instruction itself, but that these strategies will be best developed by individual faculty members.

The Advisory Group also readily acknowledged that the pursuit of broader outcomes should not belong to higher education alone. The Advisory Group agreed that it is up to employers, civic and religious organizations, and communities and families to reinforce them. Moreover, a similar focus on learning outcomes at the high school level should support and be supported by higher education's efforts such that high school graduates are prepared to meet college-level learning expectations.

College-Level Fundamentals

College-Level Fundamentals represents the array of broad knowledge areas about which students should have significant comprehension and facility.

- 1. Written and oral communication**
Including the ability to explain, persuade, advocate and argue effectively when engaged with a variety of audiences.
- 2. Quantitative skills**
Including the use of statistical and other mathematical tools and the ability to use mathematical reasoning to solve problems and analyze complex challenges.
- 3. Technological/information science facility**
Including the abilities to understand, use and evaluate technology and the information it provides.
- 4. Breadth of knowledge about the physical and natural worlds**
Including the way scientific knowledge is acquired, tested, validated, and revised.
- 5. Breadth of knowledge about human cultures**
Including world and American histories, philosophical traditions, religions, and artistic, linguistic, and cultural legacies; economic and political forces; and global interdependence.
- 6. Knowledge in depth/Interdisciplinary knowledge**
Including one area of specialization/expertise and an ability to integrate knowledge across disciplines

Integrative Thinking

Integrative Thinking centers on the methodologies from various disciplines to solve complex, real-world problems and to create new solutions. Such skills allow graduates to be successful in an ever-changing world.

- 1. Critical Thinking and Informed Decision-Making**
The ability to identify challenges and opportunities; analyze root causes; employ multiple perspectives; move from the particular to generalizations; move from concrete situations to abstraction; interpret data; determine similarities and differences; and decide and act based on the best data available.
- 2. Creativity and Innovation**
The ability to understand the dynamics of change; execute continuous improvement of existing elements, systems, and processes; create breakthrough improvements and out-of-the-box thinking toward new elements, systems, and processes; demonstrate originality and inventiveness.

3. Problem Solving

The ability to test hypotheses; reflect and learn from mistakes; and demonstrate persistence and endurance in seeking and coming to solutions.

4. Systems Thinking

The ability to view situations holistically through understanding how immediate actions in one area may affect and interact with other areas with unintended consequences; to understand the parts in relation to the whole.

Civic, Organizational, and Career Competencies

Civic, Organizational, and Career Competencies encompass a range of personal, interpersonal, and group behaviors that are required to be an effective and successful citizen and worker in any organizational and/or career setting.

1. Relevance of Education/Lifelong Learning

Graduates understand how their education connects to the real world, to changes in the global economy, trends in the workforce, and future opportunities—the importance of today’s knowledge economy and the types of careers associated with this economy—and the need for continuous and lifelong learning to remain effective over the life span. Graduates continue to monitor their learning needs and acquire new knowledge and skills as needed.

2. Civic and Social Responsibility

Graduates know how to be effective citizens who engage in national and international democratic and political processes. Graduates experience their interconnectedness and interdependence with others and understand the responsibilities that come with being part of a community, acting with integrity in an ethical manner.

3. Personal Responsibility

Graduates take responsibility for their actions and for their own career and life choices. Graduates demonstrate an understanding of values and the importance having a moral compass.

4. Workplace Skills

Graduates demonstrate personal accountability and effective professional skills such as goal setting, project management, outcome assessment, and corrective action as well as personal habits such as punctuality and dependability.

5. Teamwork/Collaboration

Graduates negotiate and solve interpersonal and team conflicts. Graduates understand the balance between leadership and team roles, assuming necessary responsibilities to achieve goals. Graduates interact with a diversity of colleagues and others in a respectful, effective manner.

III. Recommendations

The members of the Advisory Group believe that the Commonwealth should have a shared set of learning outcomes for graduates of all the state's higher education institutions and recognizes that higher education institutions must appropriately take leadership in achieving these outcomes in collaboration with multiple stakeholders. To achieve this vision, the Advisory Group makes the following recommendations to the Commissioner of the Department of Higher Education and requests that he provide a progress report to the Advisory Group members in one year:

1. *Massachusetts public institutions of higher education should pursue a thorough analysis comparing their respective institutional student learning outcomes to those contained in this report.*
2. *The Department of Higher Education and the public institutions of higher education should engage in discussion to adopt a shared student learning outcomes framework across the Commonwealth.*
3. *The Department of Higher Education and the public institutions of higher education should engage in discussion on the achievement of and accountability for a shared student learning outcomes framework across the Commonwealth.*
4. *The Department of Higher Education should support the plans of public higher education institutions to work toward meeting the outcomes.*
5. *The Departments of Early Education and Care, Elementary and Secondary Education, and Higher Education should engage in K-16 learning outcomes alignment activities.*
6. *The Department of Higher Education and the public institutions of higher education should consider participation in the American Association of Colleges & Universities' Liberal Education and America's Promise initiative.*
7. *The Department of Higher Education and the public institutions of higher education should consider participation in national or international initiatives that will benchmark Massachusetts' achievement levels against other states and countries.*
8. *The Department of Higher Education and the public institutions of higher education should have an ongoing relationship with the employer community to better understand and respond to prospective employee perspectives and needs.*
9. *Business, non-profit, and community leaders should provide institutions of higher education with guidance, resources, and opportunities for students to engage in activities, internships, and programs that promote the learning outcomes outlined in this report.*
10. *This report should be shared with the independent institutions of higher education in Massachusetts.*

Appendix A: Massachusetts Board of Higher Education Motion

BOARD OF HIGHER EDUCATION

REQUEST FOR COMMITTEE AND BOARD ACTION

COMMITTEE: Assessment and Accountability **NO.:** AAC 09-05

COMMITTEE DATE: November 14, 2008

BOARD DATE: November 21, 2008

TASK FORCE ON 21ST CENTURY SKILLS

MOVED: The Board of Higher Education recognizes the need to ensure that graduates from the public institutions of higher education are prepared with the skills necessary for success in a technologically complex, globally competitive world. If the Commonwealth of Massachusetts is to prosper in the future, college graduates must master the academic knowledge and applied skills necessary for success in the knowledge-driven 21st century.

In furtherance of the above, the Board of Higher Education hereby establishes the **Task Force on 21st Century Skills**, the purpose of which is to make recommendations on how 21st century skills—such as global awareness, critical thinking, and ethical leadership—can be more fully integrated into college student learning to better prepare students for today’s career and citizenship challenges and demands. Task Force members shall be appointed by the Chair of the Board of Higher Education.

Authority: Massachusetts General Laws Chapter 15A, Section 9

Contact: Dr. Francesca Purcell, Associate Commissioner for Academic and P-16 Policy

BOARD OF HIGHER EDUCATION

November 2008

Background

Over the past year, there have been a number of initiatives in Massachusetts focused on preparing K-12 students to succeed in today's complex and competitive world.

- Under Governor Deval Patrick's leadership, Massachusetts was accepted into the Partnership for 21st Century Skills, a network that brings together the business community, education leaders, and policymakers to define a vision to ensure every student's success to be citizens and workers in the 21st century. The Partnership works to infuse into education 21st century skills, such as communication, information processing, critical thinking, media literacy, creativity, global awareness, cultural competency, problem-solving, teamwork, self-directed learning, and leadership.
- The Department of Elementary and Secondary Education convened a task force to make recommendations on how 21st century skills can be integrated into the state's existing educational program. Part of this work included identifying appropriate standards, assessment and accountability components, as well as curriculum, professional and teacher development that will lead to successful inclusion of 21st century skills in K-12 education.
- The Massachusetts Business Alliance for Education published a report in October 2008, *Educating a 21st Century Workforce*, which provides strategies to ensure that all high school students graduate prepared for college, career, and citizenship.

In addition to these efforts, the Department of Higher Education and the Department of Elementary and Secondary Education have worked collaboratively on numerous initiatives seeking to improve student college and career readiness. These initiatives have been part of the Commonwealth's commitment to the National Governors Association High School Honor States Initiative and the American Diploma Project.

To build and expand upon the work completed by policymakers, education and business leaders, and community organization in Massachusetts dedicated to 21st century skill development focused predominantly at the K-12 level, the Board of Higher Education seeks to ensure that graduates from the public institutions of higher education are prepared with the skills necessary for success in a technologically complex, globally competitive world. If the Commonwealth is to prosper in the future, college graduates must master the academic knowledge and applied skills necessary for success in the knowledge-driven 21st century.

To make recommendations on how 21st century skills can be more fully integrated into college student learning to better prepare students for today's career and citizenship challenges and demands, the Board of Higher Education will establish the **Task Force on 21st Century Skills**, the purpose of which is the following:

- To review the work of the Board of Elementary and Secondary Education Task Force on 21st Century Skills;
- To review the literature on 21st century skills pertaining to higher education;
- To make recommendations on how to better align 21st century skills between K-12, higher education, and workforce development, and
- To make recommendations on how 21st century skills can be more fully integrated into the undergraduate experience, such that graduates can demonstrate greater competence in areas, such as written and oral communication, scientific and quantitative reasoning, critical analysis and logical thinking, and information literacy.

The Task Force on 21st Century Skills shall be chaired by a member of the Board of Higher Education and shall include representatives from members of the Board of Elementary and Secondary Education Task Force on 21st Century Skills; the Legislative Joint Committee on Higher Education; and higher education, business, and community organization leaders. Task Force members shall be appointed by the Chair of the Board of Higher Education.

The Task Force on 21st Century Skills shall meet on a regular basis from December 2008 through April 2009 and shall report its findings and recommendations to the Commissioner, who shall present the findings and recommendations to the Board of Higher Education no later than the June 2009 meeting.

Appendix B: Membership of the Commissioner's Advisory Group on Undergraduate Education

Members

Nancy Hoffman, Chair

Vice President, Jobs for the Future
Member, Board of Higher Education

Mary Grant

President
Massachusetts College of Liberal Arts

Ahmed Abdelal

Provost
University of Massachusetts Lowell

Reverend Gregory Groover

Pastor, Charles Street AME Church
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David Angel

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Paul Levy

President and Chief Executive Officer
Beth Israel Deaconess Medical Center

Gerald Chertavian

Chief Executive Officer and Founder
Year Up

Linda Mason

Chairman and Founder
Bright Horizons Family Solutions

Designee:

Casey Recupero

*Executive Director, Boston
Year Up*

Ray Stata

Co-founder and Chairman of the Board
Analog Devices

Nicholas Donohue

President and Chief Executive Officer
Nellie Mae

Representative David Torrissi

House Chair
Joint Committee on Higher Education

Senator Anthony Galluccio

Senate Chair
Joint Committee on Higher Education

Appendix C: Reference List

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