

BOARD OF HIGHER EDUCATION

REQUEST FOR COMMITTEE AND BOARD ACTION

COMMITTEE: Academic Affairs

NO.: AAC 16-19

COMMITTEE DATE: January 19, 2016

BOARD DATE: January 26, 2016

EXTENDING CAMPUS WORK IN THE AREA OF DEVELOPMENTAL MATHEMATICS

MOVED: The Board of Higher Education hereby amends AAC 14-12 to extend the period of experimentation of the developmental math campus GPA pilots through the 2018-2019 academic year. During this period, public higher education institutions may use the placement standards listed below for recent high school graduates (a student who has graduated from high school within the last three years):

- Pilot A1 Standard: 2.7 GPA or above
- Pilot A2 Standard: 2.7 GPA and a “B” or higher in Algebra II
- Pilot A3 Standard: 2.7 GPA and four years of high school math

The Board also encourages campuses to assess more students using the new Pilot A standards beginning in the Fall of 2016. The Board further directs the Department to report back to the Board in the Fall of 2018 with a status report which shall include the findings of the new Pilot A standards.

The Board hereby accepts the University of Massachusetts Donahue Institute (UMDI) Final Report, “A Qualitative Study on the Developmental Education Strategies in Mathematics Pilot Initiative.” The Board thanks the UMDI for their hard work and participating campuses for their commitment to student success (Appendix A).

Authority: Massachusetts General Laws Chapter 15A, Section 6, 9(c), 9 (u) and 32.

Contact: Dr. Patricia A. Marshall, Deputy Commissioner for Academic Affairs and Student Success

BACKGROUND

In March 2012, the Commissioner of Higher Education charged the Task Force on Transforming Developmental Math Education to recommend steps to improve the percentage of students that complete developmental math education and complete a college-level math course. The Task Force focused on four key areas: Research and Education, Developmental Math Assessment and Placement, Developmental Math Structure, and Developmental Math Content.

The Task Force made a series of four recommendations in its report:

1. By 2014 the Board of Higher Education will approve revisions to the 1998 common assessment policy by establishing new criteria for placement in developmental education and college-level courses.
2. The Board of Higher Education will require public higher education institutions to establish general academic pathways and require students to select a pathway early in their educational career.
3. The Board of Higher Education will require public higher education institutions to revise the content, sequencing, and timeframe of developmental education
4. The Department of Higher Education will provide ongoing support for the implementation of these recommendations.

In October 2013, the Task Force on Transforming Developmental Math Education presented its final report to the Board of Higher Education (BHE). In response, the BHE adopted AAC 14-12 and revised the 1998 Common Assessment Policy by authorizing new criteria for placement in developmental education and college-level courses, consistent with Recommendation 1 of the report. The 2014–15 academic year was set as a “pilot study year” during which campuses were strongly encouraged to revise the content, sequencing, and timeframe of their developmental math offerings. The BHE also set an intermediate fall 2018 goal of increasing by 20% the rate of students completing a first gateway-level course within two years of enrollment.

In December 2013, the BHE adopted AAC 14-19 and urged campuses to design general “academic pathways” for all students, including math sequences consistent with the academic requirements of each pathway or “meta-major,” such as social sciences, liberal arts, and STEM (science, technology, engineering and math). Furthermore, the BHE authorized the Commissioner to convene an implementation team to promote best practices by institutions during the 2014–15 academic year.

In June 2015, the BHE amended AAC 14-12 to extend the period of experimentation and evaluation of the developmental math pilots to encompass sufficient time to allow for the collection of additional data on the success of students in credit-bearing courses. Additionally, the BHE charged the DHE to provide an evaluation encompassing both quantitative and qualitative analyses of the campus pilots. The BHE also asked the DHE to bring forth a recommendation upon completion of the evaluation.

During the 2014-2015 and 2015-2016 academic years, campuses implemented two types of GPA pilots that were categorized under either the Pilot A standard or the Pilot B standard. Institutions had the option to implement either the Pilot A standard, Pilot B standard, both of these standards, or none of these standards. The basic definitions of the two pilot standards are below:

- Pilot A: The use of a 2.7 GPA or above. In many cases, campuses chose to use additional measures, including high school math GPA and SAT scores.
- Pilot B: The use of a GPA between 2.4 and 2.69. Like the Pilot A standard, campuses had the option to use additional measure, including high school math GPA and SAT scores.

It is important to note that the DHE gave campuses the liberty to use supplemental measures, if they preferred. There were also a number of campuses that continued to solely use solely Accuplacer to place students into college-level math courses.

Qualitative and Quantitative Analysis

DHE staff began working with Greta Shultz, Senior Research Manager, Hadley Moore, Research Manager, and Steven Ellis Director of Applied Research and Program Evaluation, at the University of Massachusetts Donahue Institute (UMDI) in May 2015 in an effort to conduct a qualitative study of the developmental math campus GPA pilots. The study addressed five sets of research questions:

1. **Motivation:** Why did campuses participate in the pilot initiative?
2. **Implementation:** How did campuses implement their pilot programs? In what ways and to what extent did campuses' actual implementation adhere to or depart from their planned implementation?
3. **Changes associated with the pilot:** How, if at all, did campus administrative processes need to adapt to support the new model?
4. **Reflections on the pilot experience:** How do campus administrators and faculty view the strengths and weaknesses of their pilot approaches at this juncture? From their perspective, how did the pilot approaches compare to the traditional (Accuplacer) enrollment and placement model?
5. **Lessons learned and implications:** What are the lessons learned for other higher education institutions and the Department? How can implementation of the pilot initiative be improved?

Site visits were conducted at two community colleges, two state universities, and one University of Massachusetts campus. The UMDI team conducted individual and small-group interviews with administrators and faculty members who were involved in the planning and/or implementation of the GPA pilots.

The final report submitted by UMDI outlines their findings (Appendix A). According to the report, administrators and faculty believe that the use of alternative placement criteria is promising across institutions: "Across institutions, faculty and administrators [expressed] markedly more confidence in the 2.7 GPA as opposed to the 2.4–2.69 score, and some institutions eliminated that lower criterion in fall 2015" (UMDI, 2015, p. 7). This result is consistent with the DHE's analysis of the data generated by the GPA pilots.

Students assessed as college-ready under the Pilot A standard successfully completed a gateway level math course at about the same rate as Accuplacer-assessed students. DHE staff recommend that campuses discontinue the use of the Pilot B standard, given that the research shows that students placed using this approach succeed at considerably lower rates than those placed either by Accuplacer or the Pilot A standard. Students assessed as college-ready under the Pilot A standard successfully completed

a gateway level math course at about the same rate as Accuplacer-assessed students. Therefore, DHE staff recommends that campuses begin to assess more students using the new Pilot A standards in Fall 2016.

A quantitative analysis of the campus pilots in academic year 2014–2015 shows that, at the community colleges, 77.3% of students placed into college-level math using Accuplacer completed the course compared to 75.9% of students placed using Pilot A standard. Only 61.7% of students placed using Pilot B standard completed a college-level math course. Interestingly, 67.4% of students assessed as not college ready also completed a college-level math course.

Simultaneously, at the state universities 84.3% of students placed into college-level math using Accuplacer completed the course compared to 91.0% of students placed using Pilot A standard. 80.1% of students placed using Pilot B standard completed a college-level math course and 84.0% of students assessed as not college ready also completed a college-level math course.

At the University of Massachusetts, 83.4% of students placed using Accuplacer completed a college-level math course, while 81.1% of students placed under Pilot A standard completed a college-level math course. 63.3% of students placed using Pilot B standard completed a college-level math course and 88.1% of students assessed as not college ready also completed a college-level math course.

A recent analysis conducted by DHE staff found that campuses that implemented the GPA pilots saw an increase in the percent of students enrolling and completing a gateway-level math course. At the same time, the percent of students enrolling in developmental math decreased. This is true for both the community colleges and state universities.

Recommendation

Given that the Board set an intermediate goal of increasing by 20% by the Fall of 2018 the rate of students completing a first gateway college-level math course within two years of enrollment (using the 2009 rate as the baseline), the DHE recommends that campuses limit the GPA pilots to the following measures:

- Pilot A1 Standard: 2.7 GPA or above
- Pilot A2 Standard: 2.7 GPA and a “B” or higher in Algebra II
- Pilot A3 Standard: 2.7 GPA and four years college high school math

DHE staff will continue to collaborate with campuses in developing alternative math pathways through the MassTransfer Pathways initiative. These pathways will include varying sequences in mathematics consistent with the requirements of continuing studies within academic areas associated with each pathway. DHE staff will also continue to promote promising practices, particularly around revising content, sequencing, and the timeframe of campus developmental math education offerings consistent with varying math requirements.