Welcome Letter

We are delighted to share the seventh issue of the Math Efficacy Report (formerly, Making the Grade). Both Pearson and the mathematics community have come a long way since our first issue in 2005—the content and structure of this report directly reflect both these enormous strides and today’s rapidly evolving higher education landscape.

At Pearson, we define efficacy as a measurable impact on improving someone’s life through learning. We are embarking on a global education initiative and dedicating ourselves to the pursuit of efficacy and improved learner outcomes.

On the following pages you’ll find exemplar, data-driven case studies from two- and four-year institutions, as well as fully online implementations, plus the following feature articles inspired by the most talked about topics in higher ed mathematics:

• Studies on Long-Term Success: 10+ Years of Sustained Positive Learning Outcomes
• Personalized and Adaptive Learning: Successful Implementation Models
• College–High School Partnerships: Dual-Enrollment and Bridge Programs
• Changing the Equation: Observed Best Practices
• Getting Started: Planning Your MyMathLab Implementation

Looking for more case studies? Visit the Pearson Results Library, an online repository of more than 400 data-driven case studies quantifying the positive impact of MyLab and Mastering programs on learning outcomes, retention, and subsequent success. This comprehensive database is cross-referenced by institution type, course format, state/province, and more; and is easy to access at www.pearsonmylab.com/results.

We extend our deepest gratitude to each contributing instructor. Each case study was submitted voluntarily and without compensation; each instructor submitted his or her study and remained available for follow-up interviews. Their efforts are invaluable.

We invite you to contact us with any questions about this report, as well as to share your ideas, your best practices, or your results in our next edition. Pearson is happy to provide both consultation and data collection tools to help you measure the impact of a MyLab & Mastering product in your course.

We look forward to hearing from you.

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Math Efficacy Report

Studies on Long-Term Success: 10+ Years of Sustained Positive Learning Outcomes

Schools that choose to address their challenges by redesigning their courses with online learning support, such as MyMathLab, do so with the goal of long-term, sustainable change. Pearson examined some of its most sustainable implementations and discovered that the most critical elements to ensuring the long-term success of a redesign are a willingness to take risks and a commitment to continually reassess results and make changes accordingly.

It is this willingness to try—and fail—that enables an institution to discover the optimum configuration of practices that work best for its faculty and its students. This is why, in concert with the pedagogical characteristics described below, the University of Alabama’s mathematics department is still experiencing learning gains 15 years after first implementing MyMathLab; Louisiana State University’s gains are going strong 10 years later; and Quinisigamond’s results continue to grow after 14 years.

Read on to learn how these and other MyMathLab early adopters are achieving their goals and sustaining them over a very, very long time.

University of Alabama

REQUIRED USE AND MANDATORY ATTENDANCE

Improved pass rates throughout the math program were a primary goal at early-adopter, University of Alabama. Not surprisingly, implementation of MyMathLab in an Emporium model in summer 2000 resulted in a rise in redesigned pass rates—from 40 to 50 percent. Administration was inspired, but not finished.

By 2007, the department had heeded students’ requests for the redesign format in higher-level courses. “Students learn math by doing math,” says Joe Bensen, then senior associate dean at the school’s College of Arts and Sciences. Required assignments in MyMathLab and mandatory lab and class attendance enabled more students to do more math.

Although already using the majority of features offered in MyMathLab, including customization, homework, quizzes, tests, and prerequisites, in 2009 the school employed even more of its tools, including item analysis and pooling. “We learned that it takes time,” says Benson. “Administrations need to realize that redesign is unique to each institution. And you have to be patient. Our progress has continued; our numbers go up more every semester.”

As studies have become more longitudinal—data currently spans 13 academic years and covers four courses and seven sections—the school has realized how MyMathLab works best: as part of a larger redesign that includes required use and mandatory attendance. Data consistently show a direct correlation between required attendance in the labs and higher success rates.

A successful implementation never truly ends. It is an ongoing process, ever evolving with the emergence of new and improved technology, the entry of each unique cohort of students, and the increased amount of information gleaned via the long-term tracking and measuring of student data.¹

In 2001, in an effort to create a measurable way to ensure all students received the same high-quality preparation to progress to and succeed in college-level math, the college redesigned its developmental math program using MyMathLab. By spring 2006, pass rates

Quinsigamond Community College

CONSISTENT GRADING AND DELIVERY OF OBJECTIVES

Quinsigamond Community College caters to a very diverse population, including adult, learning disabled, part-time, nonnative English speaking, and evening students. As such, more than 80 percent of its incoming students test into at least one level of developmental math. A rising number of developmental math students was resulting in more developmental math sections, more part-time faculty, and inconsistent delivery of objectives and grading.

In 2001, in an effort to create a measurable way to ensure all students received the same high-quality preparation to progress to and succeed in college-level math, the college redesigned its developmental math program using MyMathLab. By spring 2006, pass rates

Table 1. Success Rates of MyMathLab Implementation by Semester, Fall 2005–Fall 2013

<table>
<thead>
<tr>
<th>Course</th>
<th>Fall 00</th>
<th>Fall 01</th>
<th>Fall 02</th>
<th>Fall 03</th>
<th>Fall 04</th>
<th>Fall 05</th>
<th>Fall 06</th>
<th>Fall 07</th>
<th>Fall 08</th>
<th>Fall 09</th>
<th>Fall 10</th>
<th>Fall 11</th>
<th>Fall 12</th>
<th>Fall 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beg Algebra</td>
<td>54.6%</td>
<td>56.5%</td>
<td>60.6%</td>
<td>64.2%</td>
<td>73.6%</td>
<td>74.0%</td>
<td>67.8%</td>
<td>67.2%</td>
<td>64.0%</td>
<td>64.7%</td>
<td>84.6%</td>
<td>63.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inter Algebra</td>
<td>50.2%</td>
<td>60.5%</td>
<td>62.9%</td>
<td>78.7%</td>
<td>67.2%</td>
<td>73.8%</td>
<td>75.2%</td>
<td>71.1%</td>
<td>72.1%</td>
<td>70.5%</td>
<td>72.2%</td>
<td>65.3%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finite Math</td>
<td>60.5%</td>
<td>70.3%</td>
<td>71.8%</td>
<td>66.0%</td>
<td>69.2%</td>
<td>67.1%</td>
<td>72.1%</td>
<td>67.7%</td>
<td>70.4%</td>
<td>73.2%</td>
<td>72.2%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Precalc Algebra</td>
<td>68.2%</td>
<td>55.1%</td>
<td>65.1%</td>
<td>45.15%</td>
<td>66.8%</td>
<td>61.2%</td>
<td>67.9%</td>
<td>73.4%</td>
<td>70.3%</td>
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</tr>
<tr>
<td>Trigonometry</td>
<td>78.5%</td>
<td>80.0%</td>
<td>79.7%</td>
<td>80.6%</td>
<td>73.2%</td>
<td>83.7%</td>
<td>87.8%</td>
<td>85.5%</td>
<td>82.6%</td>
<td>83.6%</td>
<td>77.8%</td>
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</tr>
<tr>
<td>Precal Alg/Trig</td>
<td>50.7%</td>
<td>64.7%</td>
<td>64.7%</td>
<td>60.4%</td>
<td>61.9%</td>
<td>68.6%</td>
<td>68.2%</td>
<td>67.6%</td>
<td>66.4%</td>
<td>64.7%</td>
<td>56.3%</td>
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</table>

Average Intermediate Algebra success rates are an impressive 70 percent in the fall semesters and 58 percent in the spring semesters (tables 1 and 2). Today, faculty continues to hone the redesign and explore what best supports students—and what doesn’t.

When asked about a recent decrease in fall Intermediate Algebra pass rates, Jamie Glass, lab coordinator, shared the results of some of the school’s recent experiments. “I attribute the decrease to adjusting the curriculum in that course plus changing books plus being mandated to change Beginning Algebra quite a bit. We learned that the adjustment didn’t prepare students for Intermediate Math as well as it could, so we are tweaking it to attain continuity between the two courses again. There is always room to try and make things better, which we constantly try to do, and sometimes what we do does not work.”

“Administrations need to realize that redesign is unique to each institution. And you have to be patient. Our progress has continued; our numbers go up more every semester.”

—Joe Benson
University of Alabama