

Part V
QEP Impact Report
August 17, 2019

Executive Summary

Louisiana State University at Eunice's Quality Enhancement Plan (QEP), **Path 2 Math Success**, is the result of an examination of institutional data and dialogue between various institutional stakeholders including faculty, administration, staff, and students. These efforts led to a number of institutional issues and possible topics being identified as worthy of consideration. As the issues were narrowed, however, student retention emerged as a primary topic. From an institutional perspective, the emphasis on student retention and success is clearly outlined, including specific strategies to accomplish these institutional goals in the FY 2011 through FY 2016 LSU Eunice Strategic Plan.

Further examination of the data revealed that student groups with problematic retention had one issue in common—lack of success in developmental mathematics. Through the examination of data, presentation of various reports, and an honest and straightforward discourse, developmental mathematics emerged as the primary topic of LSU Eunice's QEP. With implementation being scheduled over three years, **Path 2 Math Success** creates a variation of the "Mathematics Emporium" course delivery system where students attend class once a week and then spend time in a mathematics lab using video lecture and computer software to learn the material. At LSU Eunice, two courses—Pre-Algebra and Introduction to Algebra—will be competency-based, with mandatory weekly attendance and modular structure including more frequent assessment over smaller "chunks" of material. Features of the program include

- 1) a module pretest:
 - a) Students demonstrating a minimum level of competency in a particular module may skip it.
 - b) Students who do not achieve a minimum level of competency will watch video lectures and complete computerized homework assignments.
- 2) three opportunities to demonstrate competency of the subject matter in the module, with intervention such as targeted homework and tutoring if necessary.
- 3) the option to complete more than one course in a semester, saving students money and reducing their time in developmental education.

Actions which are required to execute, assess, and revise the plan will be integrated into the existing institutional comprehensive planning and evaluation plan. The plan consists of three goals. The QEP seeks to

Goal 1: Increase student learning in developmental mathematics using innovative techniques of instruction;

Goal 2: Increase student success in the first general education mathematics course after completion of developmental mathematics;

Goal 3: Improve institutional effectiveness by providing faculty training, increasing student retention in mathematics, and decreasing time spent in developmental mathematics.

Specific student learning outcomes and a comprehensive assessment plan accompany each goal to guide implementation, promote success, and revise the QEP in progress if necessary.

Initial goals and Intended Outcomes of the QEP

The QEP Committee developed the following goals and objectives:

Goal 1. The QEP seeks to increase student learning in developmental mathematics using innovative techniques of instruction. The objectives are

Objective 1.1: The QEP seeks to increase achievement of student learning outcomes (SLOs) in MATH 0001 (Pre-Algebra) and MATH 0002 (Introductory Algebra).

Objective 1.2: The QEP seeks to increase the cognitive ability of students enrolled in MATH 0001 and MATH 0002 by course redesign.

Objective 1.3: The QEP seeks to increase student mathematics scores on the Collegiate Assessment of Academic Proficiency (CAAP).

Goal 2. The QEP seeks to increase student learning in the first general education mathematics courses after completion of developmental mathematics. The objectives are

Objective 2.1: The QEP seeks to increase achievement of SLOs in Applied College Algebra (MATH 1015) and College Algebra (MATH 1021).

Objective 2.2: The QEP seeks to increase student mathematics scores on the Collegiate Assessment of Academic Proficiency (CAAP).

Goal 3. The QEP seeks to improve institutional effectiveness by providing faculty training, increasing student retention in mathematics, and decreasing the time spent in developmental mathematics. The objectives are

Objective 3.1: The QEP provides professional development opportunities in alternative forms of instruction to mathematics faculty teaching courses associated with the QEP.

Objective 3.2: The QEP will increase student retention and completion in the developmental and general education mathematics sequence.

Objective 3.3: The QEP will reduce the amount of student time spent in developmental mathematics.

Changes Made to the QEP and Reasons for Making Changes

Although the **Path 2 Math Success** and all of its major components were implemented, some changes occurred as a result of faculty discussions, student request, and analysis of the data. First, a modular version of MATH 1015 (general education Applied College Algebra) was created based on student request so students could begin in MATH 0001, proceed to MATH 0002, and complete their first general education mathematics course in a modular format. Creating a modular MATH 1015 made sense in terms of pedagogy; however, it was not originally considered by the 2013 QEP Committee.

The second change dealt with the MATH 0002 course that was mentioned by the 2013 QEP Committee, but not acted on because the data at that time was inconclusive. Historically, students took two developmental courses – MATH 0001 (Pre-Algebra) and then MATH 0002 (Introductory Algebra). Completion of both courses allowed students to then take either MATH 1015 (Applied College Algebra) or MATH 1021 (College Algebra), depending on the students' major, in order to satisfy their first general education mathematics requirement. SLO data from the two general education mathematics courses indicated that MATH 0002 was over preparing students for MATH 1015 and underpreparing them for MATH 1021. As a result, the mathematics faculty split the MATH 0002 course into two targeted developmental education mathematics courses, implementing the change in fall 2017. Faculty created a three credit MATH 0015 (Introductory Algebra) for students needing MATH 1015 and a four credit MATH 0021 (Intermediate Algebra) for students needing MATH 1021. Throughout the development of

the two courses, the mathematics faculty removed some of the more complicated material from MATH 0015 that was not needed for MATH 1015 and added material in MATH 0021 that was needed for MATH 1021. Note that since the SLOs for the two new courses were the same, data was weighted by the number of students and combined as if the two courses were still MATH 0002 in order to remain consistent. As a result, MATH 0002 will be used throughout this document.

The third change directly affected Objectives 1.3 and the assessment using the American College Test's (ACT) Collegiate Assessment of Academic Proficiency (CAAP). Objective 1.3 was canceled outright when it was found that no sort key existed to compare modular students and non-modular students on the Content Analysis Report. LSU Eunice personnel had discussed the metric and methodology with CAAP personnel prior to implementation, so it was unfortunate that the data never materialized.

The last change regarded mandatory attendance in a classroom and lab setting. Initially, it was the consensus of the math faculty to have students attend one class period in a classroom with a faculty member and the other class period meeting in the mathematics lab with a credentialed tutor. The plan was to enroll 30-35 students and split the class on the first day so that one half would meet with the faculty member while the other half was in the lab, and then at next class meeting, the groups would switch so that all students would have equal time in the classroom and in the lab. After the pilot section was offered, mathematics faculty, along with the QEP Coordinator teaching the pilot course, recommended that all students attend all class meeting times and lowered the maximum enrollment to no more than 28 students per section. Students were not assigned a lab time; instead, they were able to take advantage of the lab as their own personal schedule permitted. This decision was made in order to establish a "routine for students" while reinforcing the need to attend class to stay on task and not fall behind. In addition, faculty believed that students would establish a better rapport with their assigned faculty member and their fellow classmates.

Impact on Student Learning and Achievement Goals and Outcomes

This section analyzes each of the outcomes based on student data from the QEP period, which was Academic Year (AY) 2013-2014 through 2017-2018. The aggregated student data from the QEP period was then compared to the 2013 QEP Committee's targets to determine if the outcomes were achieved. Other comparison data is discussed in this section where appropriate. Please note that students self-selected the method of instruction (traditional face-to-face, online, co-requisite, or modular) they felt best fit their needs during the QEP period.

Objective 1.1: The QEP seeks to increase achievement of student learning outcomes (SLOs) in MATH 0001 (Pre-Algebra) and MATH 0002 (Introductory Algebra).

Objective 1.1 examined the SLO performance in both developmental mathematics courses using a direct internal assessment from the final exam. As shown in Table 1, both modular and face-to-face developmental mathematics student performance is detailed, and the modular students (highlighted) met or exceeded the target in only one case—Objective 1.1.2 on algebraic operations.

Given that the observed scores for most of Objective 1.1 were less than the established targets, Objective 1.1 is not met.

Table 1. SLO results for developmental mathematics as a percent.

SLO Description	Objective	Spring 11 to AY 12-13 Face-to-Face Historical Performance	Target	AY 13-14 to AY 17-18	
				Modular Results	Face-to-Face Results
Overall MATH 0001	1.1	71	75	72.3	70.0
Order of operations	1.1.1	76	80	74.9	74.4
Algebraic operations	1.1.2	65	70	71.2	68.2
Geometric figures	1.1.3	65	70	69.3	64.7
Total number of students	--	1581	--	1211	1413
Overall MATH 0002	1.1	66	70	68.4	64.3
Algebraic operations	1.1.4	64	70	68.6	64.1
Rectangular coordinate system	1.1.5	66	70	68.2	64.0
Total number of students	--	1373	--	967	1161

Even though Objective 1.1 was not met, the data in Table 1 suggests two other comparisons. First, comparing the modular results to the historical SLO performance suggests additional student learning did take place for modular students given the positive gains in all areas except Objective 1.1.1 dealing with the order of operations. Modular students gained an average of 2.84 percentage points considering all parts of the objectives, even though they did not meet the targets established by the 2013 QEP Committee.

Second, the data in Table 1 suggests that modular students outperformed students in traditional face-to-face sections of developmental mathematics, gaining an average 3.31 percentage points for all parts of the objective. Interestingly, the data suggests that the face-to-face student performance on the SLOs for MATH 0002 actually decreased over the QEP period. Taking the results together suggests that modular mathematics incrementally increased student learning even though the specific targets were not met.

Objective 1.2: The QEP seeks to increase the cognitive ability of students enrolled in MATH 0001 and MATH 0002 by course redesign.

Next, Objective 1.2 used a matched pretest and post test design to measure increased learning for modular mathematics students. Mathematics faculty chose SLO questions from the final exam to place on a pretest. Post test results from modular students were compared to their own pretest values and then to the post test values from the face-to-face sections (see Table 2). Benchmarking data for the face-to-face sections was gathered from AY 2013-2014 through AY 2014-2015 for MATH 0001 because the modular program was implemented in Fall 2013.

Table 2. MATH 0001 Pretest and post test data as a percent.

Statistic	Face-to-Face Results Fall 2013 – Spring 2015			Modular Results Fall 2013 – Spring 2019		
	Pretest	Post Test	Gain Score	Pretest	Post Test	Gain Score
Mean	44.89	73.02	28.13	27.80	68.90	41.10
Median	43.33	75.00	31.67	21.20	72.80	51.60
Standard deviation	11.79	13.50	--	22.10	19.5	--
n	497	497	497	918	918	918

For the MATH 0001 course, the post test results for modular students did exceed their own pretest scores with a mean gain score of 41.10 percentage points (see highlighted in Table 2).

However, the modular post test mean of 68.90% did not exceed the face-to-face post test mean of 73.02%.

Next, the same matched pretest post test design was employed in the MATH 0002 course, with data being benchmarked in the face-to-face sections from AY 2014-2015 through AY 2015-2016 to allow the pilot group to move into MATH 0002 the second year of the QEP. The data shown in Table 3 indicates that the results for the modular student post test were higher than their pretest by an average of 43.92 percentage points (see highlighted). The data also indicates that the modular students' post test scores were slightly higher than the post test scores for face-to-face students (67.61% versus 67.51%).

Table 3. MATH 0002 Pretest and post test data as a percent.

Statistic	Face-to-Face Results Fall 2014 – Spring 2016			Modular Results Fall 2014 – Spring 2018		
	Pretest	Post Test	Gain Score	Pretest	Post Test	Gain Score
Mean	34.20	67.51	33.31	23.69	67.61	43.92
Median	33.33	68.89	35.56	20.59	69.11	45.27
Standard deviation	10.92	10.92	--	17.66	14.90	--
n	346	346	346	917	917	917

In addition, Table 2 and Table 3 indicate that the modular students had lower pretest scores, leading to larger gains from the pretest to post test. To LSU Eunice personnel, this does not suggest that weaker students were placed into the modular sections because scheduling was done by self-selection. Instead, the low scores and the difference between the face-to-face and modular pretests is considered as anecdotal given that students in both groups likely skipped a number of questions on the pretest, being unfamiliar with the material.

Given that the observed modular MATH 0001 post test score of 68.90%

- was greater than the modular math pretest of 27.80% and
- was less than the face-to-face post test of 73.02%;

Also given that the modular MATH 0002 post test of 67.61%

- was greater than the modular pretest of 23.69% and
- was greater than the face-to-face post test of 67.51%

objective 1.2 is partially met.

In examining the post test data from Table 2 and Table 3 and comparing the scores to the SLO data from Table 1, it appears as if there are inconsistencies in the data. However, the data in Table 2 and Table 3 are matched pretest and post test scores. If a student did not take the pretest, then the student's post test score was not used in the analysis, leading to differences in post test results for modular and face-to-face students. Given this weakness in design, the data in Table 1 was generated from all students taking the final exam in each course during the QEP period regardless of whether a student took the pretest or not. The matched pretest and post test design does confirm, however, that student learning took place in both the face-to-face and modular methodologies.

Objective 1.3: The QEP seeks to increase student mathematics scores on the Collegiate Assessment of Academic Proficiency (CAAP).

The intent of Objective 1.3 was to compare data between students who took the modular mathematics sequence and those who had not. However, obtaining this data from ACT proved difficult because no sort mechanism existed to determine if a student had developmental

mathematics. Since reliable Content Analysis Reports could not be generated by ACT, Objective 1.3 was canceled in the first year of the QEP.

Objective 2.1: The QEP seeks to increase achievement of SLOs in Applied College Algebra (MATH 1015) and College Algebra (MATH 1021).

Objective 2.1 was a direct internal assessment of the SLOs using the final exams in the first general education Applied College Algebra (MATH 1015) and College Algebra (MATH 1021) courses. The results from the general education mathematics SLOs were separated by whether students took face-to-face or modular developmental mathematics, using the face-to-face performance as the benchmark.

As the data in Table 4 indicates, modular developmental students outperformed students taking face-to-face developmental mathematics on the MATH 1015 and MATH 1021 SLOs, except for Objective 2.1.3 (see highlighting).¹ Despite performing lower on functions, students from modular developmental sections scored an additional 2.5 percentage points, on average, higher than students from face-to-face developmental sections.² In addition, students from the modular sections also scored at or above the typical 70% benchmark needed to indicate mastery of the College Algebra material. The results seem to suggest that modular developmental students were slightly more prepared for their college level mathematics courses.

Table 4. SLO performance in Applied College Algebra (MATH 1015) and College Algebra (MATH 1021) after taking developmental mathematics.

SLO Description	Benchmark from Face-to-face	Results from Modular Sections
Overall	68	71
2.1.1/2. Solve equations & inequalities algebraically & graphically	66	72
2.1.3. Evaluate and interpret functional values	75	73
2.1.4. Graph Functions	67	70
Total number of students	640	570

Given that the overall SLO performance for modular students > the SLO performance of the face-to-face students, Objective 2.1 is met.

Objective 2.2: The QEP seeks to increase student mathematics scores on the Collegiate Assessment of Academic Proficiency (CAAP).

Next, Objective 2.2 was an external direct assessment using the CAAP Mathematics Content Analysis Report given at the completion of MATH 1015 or MATH 1021. While the Content Analysis Report itself could not be used to generate the data due to limitations at ACT, some raw mathematics CAAP data was available for AY 2015-2016 and AY 2016-2017 from Institutional Research.³ First, using weighted averages over both years, students from face-to-face sections scored a 55.44% (n = 102), while students from modular mathematics sections scored a 55.40% (n = 94). Both scores were slightly less than the national benchmarks

¹ After the QEP was approved in fall 2013, the mathematics faculty combined MATH 1015 and MATH 1021's outcomes 2.1.1 for equations and 2.1.2 for equalities into one objective.

² Dual Enrollment students at high schools were not included in the analysis.

³ Data was not available for AY 2017-2018 because the CAAP was discontinued at the end of December 2017. The mathematics faculty attempted to give the exam in Fall 2017; however, the tests were lost during shipping and never arrived.

reported by ACT for the two years of 57.00% (n = 5981). From the data that was obtainable, the results suggest that both groups performed identically.

Given that:

- The observed score for modular students of 55.40% is approximate to the observed score for face-to-face students 55.44% and
- The observed scores for LSU Eunice mathematics students < the ACT national average

The objective is partially met.

Objective 3.1: The QEP provides professional development opportunities in alternative forms of instruction to mathematics faculty teaching courses associated with the QEP.

Next, Objective 3.1 stressed the importance of faculty development and faculty sharing information with each other as the modular mathematics program was implemented. New modular mathematics faculty completed the professional development prior to teaching and at the conclusion of their first semester of instruction. The training consisted of the faculty members reading and summarizing articles pertaining to modular mathematics, the emporium model, and developmental education the semester before they were assigned a modular section to teach. They are also required to access the course, work through it, and then observe a minimum of five hours in the modular mathematics classroom. Once the faculty members answered the questions and submitted them to the QEP Coordinator and were approved, they were given one modular mathematics section to teach the next semester and were observed by the QEP Coordinator and the Dean of Science and Mathematics. Once the semester was completed, faculty members were required to answer questions about their experience. Based on answers given, evaluation results, and direct observations, faculty were then either approved or not approved to teach more sections of modular mathematics. Two (16.7%) faculty members out of twelve were not approved to teach in the program beyond one semester. Interestingly, the faculty members themselves agreed, with one preferring to teach face-to-face and one preferring to teach online. Finally, training also included some attendance at SACSCOC Annual Meetings and regional or national conferences dealing with developmental education.

Given that all faculty teaching in the modular program completed their professional development prior to teaching and then again after the first semester, Objective 3.1 is met.

Objective 3.2: The QEP will increase student retention and completion in the developmental and general education mathematics sequence.

Objective 3.2 sought to increase the successful completion of general education mathematics (MATH 1015 and MATH 1021) by five percent, regardless of whether a student began in modular developmental MATH 0001 (Pre-algebra) or MATH 0002 (Introductory Algebra). The target was established using historical data from AY 2007-2008 through 2011-2012.⁴ Table 5 compares the historical results to QEP, with students beginning in MATH 0001 broken out by whether the student took MATH 0001 in a modular format or any other method offered (face-to-face and online). The data in Table 5 includes all students in order to be consistent with the historical data.

⁴ Successful completion of MATH 0001, MATH 0002, MATH 1015, and MATH 1021 is defined by a letter grade of A, B, or C only. The grade of D was not defined as successful completion.

Table 5. AY 2013-2014 through AY 2017-2018 MATH 0001 success and time to completion for all students beginning in MATH 0001.

Students began MATH 0001	Total Reg MATH 0001	Total Compl MATH 0001	Total Compl MATH 0002	Total Compl Gen Ed MATH	Mean No Sems Math 0001	Mean No Sems MATH 0002	Mean No Sems Gen Ed Math	Mean No Sems to Compl DE & GE Math	Percent Compl MATH 0001	Percent Compl MATH 0002	Percent Compl GE
All other Methods	1866	1283	771	435	1.167	1.233	1.297	3.697	68.757	41.318	23.312
LSUE Modular	1187	931	547	365	1.026	1.153	1.228	3.407	78.433	46.083	30.750
Total	3053	2214	1318	800	1.108	1.200	1.266	3.573	72.519	43.171	26.204
Baseline starting in MATH 0001 AY 07-08 to AY 11-12	3978	2705	1472	796	2.6		1.5	4.1	68	37	20

The data in Table 5 indicates that students beginning in modular MATH 0001 surpassed the targets established by the QEP Committee in 2013, given that:

- For MATH 0001, the observed 78.4% completion rate > the established target of 68% + 5% = 73%,
- For MATH 0002, the observed 46.1% completion rate > the established target of 37% + 5% = 42%, and
- For MATH 1015/1021, the observed 30.8% completion rate > the established target of 20% + 5% = 25%.

As a result, this portion of Objective 3.2 is met.

Next, Table 6 compares the historical results to QEP students beginning in MATH 0002 broken out by whether the student took MATH 0002 in a modular format or other method offered (face-to-face and online). Table 6 includes new first-time students only in order to avoid duplication with students taking MATH 0002 after completion of MATH 0001. Note that this is a change in methodology from the 2013 QEP Committee because all students were included in the original analysis.⁵

Table 6. AY 2013-2014 through AY 2017-2018 new first-time student success and time to completion beginning in MATH 0002.

Starting MATH 0002 as	Total Reg MATH 0002	Total Compl MATH 0002	Total Complete Gen Ed Math	Mean No Sems Math 0002	Mean No Semesters Gen Ed Math	Mean No Sems to complete DE and GE Math	Percent Compl MATH 0002	Percent Complete Gen Ed Math
All other methods	304	212	139	1.230	1.307	2.537	69.74	45.72
LSUE Modular	153	118	76	1.229	1.276	2.505	77.12	49.67
Total	457	330	215	1.230	1.296	2.526	72.21	47.05
Historical Data from AY 0708 to 1112	2787	1839	975	1.600	2.500	4.100	66	35

⁵ Note that the original QEP document reported the data for all students entering MATH 0002. This led to duplicates in the report (continuing students from MATH 0001), so the decision was made to include only new first-time students and re-run the AY 2007-2008 through 2011-2012 data. Doing so indicated that there were no substantial changes.

The data in Table 6 indicates that students beginning in modular MATH 0002 from the QEP period surpassed the targets established by the 2013 QEP Committee, given that:

- For MATH 0002, the observed completion rate of 77.1% > the established target of 66% + 5% = 71%, and
- For MATH 1015/1021, the observed completion rate of 49.7% > the established target of 35% + 5% = 40%.

As a result, this portion of Objective 3.2 is met.

Given that the observed completion rates for students beginning in MATH 0001 or MATH 0002 are greater than the targets established by the 2013 QEP committee, Objective 3.2 is met.

Objective 3.3: The QEP will reduce the amount of student time spent in developmental mathematics.

In terms of time to completion, attention is once again turned to Table 5 for modular students beginning in MATH 0001 and Table 6 for modular students beginning in MATH 0002. This objective was merely to decrease the time spent in developmental education compared to the target of 2.6 semesters for student beginning in MATH 0001 and 1.6 semesters for students beginning in MATH 0002. The data in Table 5 indicates that students starting in modular MATH 0001 reduced their time in developmental mathematics to 2.179 semesters (1.026 for MATH 0001 and 1.153 for MATH 0002), while the data in Table 6 shows that modular students beginning in MATH 0002 decreased their time in developmental mathematics to 1.229 semesters.

Given that, for students beginning in modular

- MATH 0001, the observed time in MATH 0001 and MATH 0002 of 2.179 semesters < the established target of 2.6 semesters, and
- MATH 0002, the observed time in MATH 0002 of 1.229 semesters < the established target of 1.6 semesters,

Objective 3.3 is met.

Two other pieces of data from Table 5 and Table 6 are worth mentioning. First, not only did modular completion exceed the targets in both cases, modular student completion also surpassed students enrolled in the traditional face-to-face and online courses. Second, the time to complete the first general education mathematics courses was slightly lower for modular students when compared to students in face-to-face and online methodologies. Given that, time to completion for all students during the QEP period was substantially below historical values, considering that students entering MATH 0001 reduced completion by $4.1 - 3.573 = 0.527$ semesters and students entering MATH 0002 reduced completion by $4.1 - 2.526 = 1.574$ semesters.

Unanticipated Outcomes

LSU Eunice's Modular Mathematics Program was designed so that student could complete the two developmental mathematics courses in one semester if motivated to do so, paying only a \$90 transcript fee for the second course. As this report is written, a total of 135 students completed both developmental courses in one semester. Eliminating a possible exit point between courses saved students approximately \$67,770, using fall 2018 tuition rate. With the addition of the modular MATH 1015, an additional seven students completed both developmental courses and the first general education mathematics course in one semester. One could argue that the students were not placed properly; however, LSU Eunice

recommends, but does not mandate, that students take the mathematics placement test. In this respect, the modular format allowed students who wanted to start at the beginning time to do so, then rapidly progress through course material they were already familiar with. The result was that students were able to apply for Nursing and Allied Health programs earlier than anticipated because they were able to complete their developmental mathematics sequence faster.

The next unanticipated outcome was the number of visits to the modular math lab per year. Depending on enrollment in the modular program, the number of annual visits ranged from 15,000 to almost 18,000, with upwards of 95% being specifically for modular mathematics. The fact that the lab was busy was anticipated; however, 15,000+ visits annually was not anticipated, including almost 200 student visits during spring break and nearly 600 visits during final exams week in any given semester. LSU Eunice administration responded to this demand by hiring two professional tutors and two to three student assistants to assist as needed.

Another unanticipated outcome was the number of academic dishonesty cases (students talking, using their cell phones, or using the internet while taking quizzes). To combat the issue, an Academic Misconduct Policy “sign off” sheet was included as part of the syllabus in spring 2016. The sheet defined what was meant by academic misconduct, gave examples like the ones above, and required the student’s signature as acknowledgement. Even with the “sign off” sheet, thirty-two cases of misconduct were referred to Student Affairs.

Summary

As discussed in this section and suggested by much of the data, the major impact of LSU Eunice’s QEP **Path to Math Success** was increased learning of developmental mathematics. As depicted in Table 1, increased learning took place for modular students in comparison to the historical values and to other student groups. The increased learning was supported by the pretest and post test results in Table 2 and Table 3. Data from Table 4 also suggested that modular developmental students outperformed their face-to-face peers in the first general education mathematics courses. Modular students also had a higher completion rate in all mathematics courses studied and had a reduced time to completion (see Table 5 and Table 6). In addition, 142 students completed more than one modular course in a given semester.

Finally, were the 2013 QEP **Path 2 Math** goals ultimately met given that some objectives were not met? The collective institutional response is yes—absolutely! This enthusiastic answer is based not on the developmental mathematics results in Goal 1 simply because developmental education is not an end unto itself. Instead, the answer is based on the results from Goals 2 and 3, including the increased SLO performance in the first general education mathematics course along with increased completion rates and decreased time to completion of the first general education mathematics course. The 142 students completing two to three courses in one semester was unprecedented in traditional academic progress at LSU Eunice.

Reflection on What the Institution has learned as a Result of the QEP Experience.

What was learned? Given the results, LSU Eunice personnel learned that the modular method does work for some students in much the same way that online, face-to-face, and co-requisite methodologies work for other students. Simply put, success depends on the background and motivation of the student. Many students taking the modular method attributed their success to the hands-on design and the instruction they received targeting their particular needs with the “just in time” tutoring.

Next, even though mathematics faculty were split, a few learned that they got to know their students better in a one-on-one situation by listening to their questions based on explanations.

In addition, faculty had to learn when to back away because some students wanted the challenge of learning it on their “own.” While this was counterintuitive to the reason faculty were in the classroom, success in a particular module became a matter of personal pride for some students.

In addition, because students liked the modular method and the success rates were improving, modular mathematics became a marketing point for LSU Eunice. No other institutions in the region were using it, and it seemed somewhat ironic that students working hard in a mathematics course became a way to market the institution.

Furthermore, LSU Eunice personnel learned that institutional support is crucial. The faculty supported modular mathematics from the beginning; however, the campus, in general, did as well. Otherwise, students completing more than one mathematics course in a semester would never have been possible. Many offices worked together to make that reality possible. In addition, the Chancellor and Cabinet supported modular mathematics with additional resources, even though tuition was not being collected for the second course. They simply said “do what is best for the students.”

Finally, it is worth noting that the QEP Co-chairs have been with the project since attending a presentation on the topic at the 2011 SACSCOC Annual Meeting. While the increases noted above were especially gratifying, the wish was for increase success beyond what was realized, especially in the developmental mathematics SLOs (Goal 1). Further, it was difficult to learn that many students were not successful. The data presented in this report indicates that 3,053 began in MATH 0001 or 0002 and 2,495 students did not complete a general education mathematics course (see Table 5 and Table 6).⁶ In some respects, the number not completing is deceiving from two perspectives, with the first being that LSU Eunice personnel did not control for the typical 10.5% transfer out rate in any given year. In addition, “life circumstances” were an issue for some very capable students, and no data was kept on the influence on the overall results. However, the data collection for this report matched how the data was collected for the historical data from AY 2007-2008 through AY 2011-2012.

As of this writing, modular mathematics is to be continued into AY 2019-2020 and beyond. However, given the results and current initiatives in Louisiana, faculty intend on investigating other mathematics pathways that do not include college algebra to help the 2,495 students who were not successful in completing their first general education mathematics course. It is difficult to predict what might be learned in the future; however, it seems appropriate that the next step to help students complete mathematics begins as modular mathematics matures. While the future is not certain, perhaps this is the beginnings of LSU Eunice’s 2023 Quality Enhancement Plan.

⁶ A total of 3,053 students began MATH 0001, with 800 completing their first general education mathematics course. In addition, a total of 457 began MATH 0002, with 215 completing their first general education mathematics course. As a result, 2,495 did not complete their first general education mathematics course.