

Ranger College Fifth-Year Interim Report 2018

Part V: The Impact Report of the Quality Enhancement Plan

INITIAL GOALS AND INTENDED OUTCOME

In the fall of 2011, a QEP committee was formed at Ranger College (RC) to begin the process of selecting a QEP topic through College-wide surveys and data analysis. In December 2011, the committee adopted the broad topic of technology, and more specifically the College's use of it, as the most beneficial choice. Over the subsequent fourteen months, the committee worked on focusing this topic more precisely, eventually arriving at the specific topic and title "Engage with E-Learning." In selecting this topic, the intent was to form a QEP devoted to increasing student success and student learning by engaging students through the use of technology. The topic was then further refined to establish three broad objectives with accompanying outcomes:

- 1) Ranger College will improve the technology infrastructure on each campus and at each off-site location by:
 - a. Increasing Internet access (improved bandwidth and access points)
 - b. Increasing hardware (Blackboard Server, Tandberg systems [ITV], additional computers in libraries and labs, additional computers for faculty, SMART Boards)
 - c. Increasing software (Microsoft licenses, Blackboard Integration Software, Absence/Early Alert Software);
 - d. Expand staffing to include an IT Director (technology support) and Retention Coordinator (student support)
- 2) Ranger College will improve faculty expertise in the use of instructional technology through:
 - a. Professional development training for Blackboard software;
 - b. Professional development training for SMART Boards, ITV equipment, and integration of technology methods
 - c. Professional Development training for MyMathLab
- 3) Ranger College will enhance instructional course design for increased student engagement by:
 - a. Ensuring that 100 percent of courses offered will be student-accessible on Blackboard LMS in standardized format
 - b. Implementing student attendance reporting/Early Alert System
 - c. Initiating a curriculum redesign to integrate technology into targeted courses (developmental mathematics and college algebra were selected as the focus of the redesign)

To effectively implement the QEP, a budget was established that provided funds for a half-time QEP Director (although this position ended up by being filled by two people), a half-time IT position, and a half-time Retention Coordinator, as well as funds for two full-time faculty members to engage in QEP-related curriculum development for Outcome 3.c. The sudden departure of an RC employee in 2015 who had served as one of the two QEP Directors, and who had been one of the major architects of the QEP itself, created some difficulties in continuity and follow-through during the succeeding three years of implementation. Additional developments also affected the implementation plan. The impact of these developments is reflected and addressed in what follows.

CHANGES MADE TO THE QEP AND REASONS FOR MODIFICATION

Addition of other math classes to assessment focus. "Engage with E-Learning" began with a focus on just two math classes, DMAT 0313: Beginning Algebra and Geometry and MATH 1314: College Algebra. Beginning in 2015, this focus was expanded to include another developmental math class, DFOM 0313: Foundations of Mathematics, and two additional college math classes, MATH 1332: Contemporary Mathematics and MATH 1342: Elementary Statistical Methods. Specifically, these were added to the assessment of persistence rates described for Outcome 3b. The reasoning was that since these other classes had adopted the MyMathLab online mathematics software (to be discussed further in the section about Objective 2 below), just like DMAT 0313 and MATH 1314, there was no reason

to exclude them from the QEP assessment focus. They also added a wider perspective to the assessment results, as the DMAT progression represented a STEM pathway, while the DFOM progression represented a non-STEM pathway.

Shift from Quantitative to Qualitative Focus. As stated above, outcome 3.c hinged on the redesign of the curriculum for developmental math and college algebra to facilitate the greater integration of technology. One area of concern to be addressed by this was the student success rate, with success defined as the passing of a class with a score of B or better for DFOM 0313 and a score of C or better for DMAT 1314. It was posited in the QEP that redesigning the curricula for these courses to integrate technology effectively would increase these rates. However, after two years of data collection it became apparent that many variables contribute to a student’s achievement of a D (Dropped), F, W (Withdrew), I (Incomplete), or Q (Quit)—far too many to make it feasible to accurately assess the impact of curriculum redesign and technology integration based on the stated success metric. The College thus discovered or realized that the QEP was not going to provide quantifiable data that could be definitively correlated to this key hypothesis. It likewise discovered/realized that other areas of the QEP could be valuably addressed by a qualitative assessment rather a (purely) quantitative one. Thus, the overall focus of QEP impact assessment efforts shift slightly in a qualitative direction. While data about course success in developmental math and algebra were and still are tracked and gathered along with other quantitative data to be shown and discussed in the pages below, the guiding question for the QEP has become: How does a focus on engagement with e-learning generally improve delivery of quality education and student experiences at the College? This shift is evident in the analysis and discussion that follow.

Abandonment of SMART Board element. Outcomes 1.b and 2.b stated that SMART Boards would be purchased and that training would be provided to all faculty. Budget money for the QEP was indeed used to purchase a number of SMART Boards for use in main campus classrooms. However, it was quickly discovered that the outdated design and layout of these classrooms did not accommodate effective use of this technology by faculty. The purchased SMART Boards were mounted on portable carts, and this setup proved impracticable for implementing engaging instruction. For both functional and aesthetic purposes, the College transitioned to using ceiling-mounted projectors, with the SMART Boards mounted on walls and used simply as stationary non-SMART projection screens. Additionally, this unanticipated left turn in the QEP’s integration of the SMART Boards into the College technological and instructional infrastructure resulted in just a single full-time faculty member undergoing the planned training. Within a couple of years of the QEP’s rollout, the original SMART Board component of the new technology integration initiative had been effectively abandoned.

IMPACT ON STUDENT LEARNING AND THE LEARNING ENVIRONMENT

“Engage with E-Learning” identifies specific target outcomes for each objective. Five-year results for these targets are listed on the following tables, with discussion appearing after each table.

Objective 1 Assessment			
OBJECTIVE 1 Improve campus technology infrastructure	Key Performance Indicator	Target	Result
<u>Outcome 1a</u> Increase Internet Access	Increase Internet bandwidth from 1.5 to 40 Mbps level on Ranger campus with wireless access to all buildings	40 Mbps bandwidth	Exceeded

Outcome 1b Increase Technology: Hardware	Purchase new Blackboard Server, Tandberg ITV systems, computers, and SMART Boards	Blackboard Server, 2 Tandberg Systems, 140 computers, 27 Smart Boards	Met, with modifications
Outcome 1c Increase Technology: Software	Purchase Blackboard Integration software, Absence/Early Alert software, and Microsoft licenses	125 Microsoft licenses, acquire software	Exceeded, but see discussion
Outcome 1d Hire Personnel	Hire IT Director and Retention Coordinator. (Prior to QEP these positions did not exist.)	Hire IT Director and Retention Coordinator	Met
Outcomes 1a-1d Student Satisfaction	Increase student satisfaction with technology infrastructure from baseline survey in fall of 2011. Target: results from the Student Engagement Survey (Infrastructure section) will show increased student satisfaction with technology infrastructure.	Increased student satisfaction with technology infrastructure	See discussion

Objective 1 Discussion

1a. Increase Internet Access. In 2013, RC set out to completely overhaul the level and quality of information technology (IT) at all its locations. The first objective was to increase bandwidth from single-user modems capable of 1.5 Mbps to a high-speed Internet connection at 40 Mbps, with wireless access provided in all College buildings. This target has now been exceeded. Between 2013 and 2018, RC transitioned from household personal modems to a complete array of IT hardware capable of 1 gigabit per second of bandwidth.

As fast, reliable Internet access provides the backbone for delivering a high-quality online learning experience, in 2015 Ranger College initiated a relationship with the Tier I Internet service provider CenturyLink to host a vastly improved Internet connection at each RC location. Speeds were improved up to ten times, while strong network resiliency added the assurance of dependable connectivity to students and staff both on and off campus. From Fall 2017 to present, additional improvements have been made to increase site-to-site connectivity and link redundancy.

IMPACT: With the national and global trend toward digitization of all learning resources, providing a "bigger pipe" brought access to a new high watermark for RC's technology-enhanced instructional activities. The regular use of online multimedia in classrooms became possible, distance learning grew geometrically, and collaboration among students, staff, and faculty heightened as bottlenecks were removed. The lessening of total network downtime and improved access to RC-hosted resources, independent of geographic location, also carries attendant benefits for student learning.

1b. Increase Technology: Hardware. The College planned to purchase a Blackboard server, new Interactive TV (ITV) equipment, SMART Boards to project class lessons to the students, computers for faculty, and tablets for math and English labs in the library. While it did make these purchases, after five years some of the equipment is outdated. Additionally, the server that was purchased for Blackboard is instead being used for hosting Poise ERP, the College's accounting and student registration system, with RC's Blackboard classes being hosted on the company's own remote servers.

IMPACT: These hardware upgrades and investments dramatically transformed RC's technological environment. The installation of ITV equipment in 10 different rooms across three RC locations extended the boundaries of typical brick and mortar buildings. Live, fully interactive classes can now be held in up to 10 disparate locations simultaneously, led by a single instructor. Most recently, in late summer 2018 the original Tandberg equipment has been replaced by a sleeker Zoom system that works more smoothly and offers greater capabilities and flexibility. A total rework of the wireless Internet infrastructure in both indoor and

outdoor areas at RC locations extended digital connectivity to every corner of campus life. Labs, libraries, and offices were outfitted with up-to-date computers that could more easily take advantage of RC's growing catalog of digital resources. Of additional importance even though it was not named in the QEP is the fact that RC has placed miles of cable in the past five years and has brought in several redundancy options to avoid Internet downtime. This all represented a systemic change of great importance. The Ranger College of 2018 looks different and, in many ways, behaves differently from the institution that wrote "Engage with E-Learning" in 2013. The impact of hardware improvements has been felt as much by the institution as by its students.

1c. Increase Technology: Software. Truly engaging in e-learning required RC to examine the engine behind its learning delivery model. Prior to 2014, no major learning management system (LMS) had been implemented. After researching the field, RC entered into a relationship with the flagship LMS provider Blackboard and provided several training sessions for faculty, with guidelines established for a baseline amount of information that each faculty member is required to post in his or her Blackboard course shells. Furthermore, in 2015 RC adopted Google's G Suite for Education platform, primarily for collaboration, data storage, and directory services. To fill the gap in productivity software, RC extended Microsoft Office 365 to all students, staff, and faculty. The College also successfully purchased and implemented the Early Alert Retention (EAR) system, which allows the Retention Coordinator (see below) to collect and monitor student absences and grade reports. The system can also be used by faculty to send an alert to the Retention Coordinator when there are concerns about a student's success based on academic or other matters.

IMPACT: Ranger College is now using what is widely considered to be the gold standard of LMS's when it comes to student engagement, and this does appear to have increased student engagement with coursework. The College has fully integrated with state-of-the-art Google Database software. Students, faculty, and staff have access to Office 365. The EAR system is in place (although see the caveat below). In multiple ways, the software improvements associated with the QEP have brought students more and better options for engaging with their studies and with the life of the College.

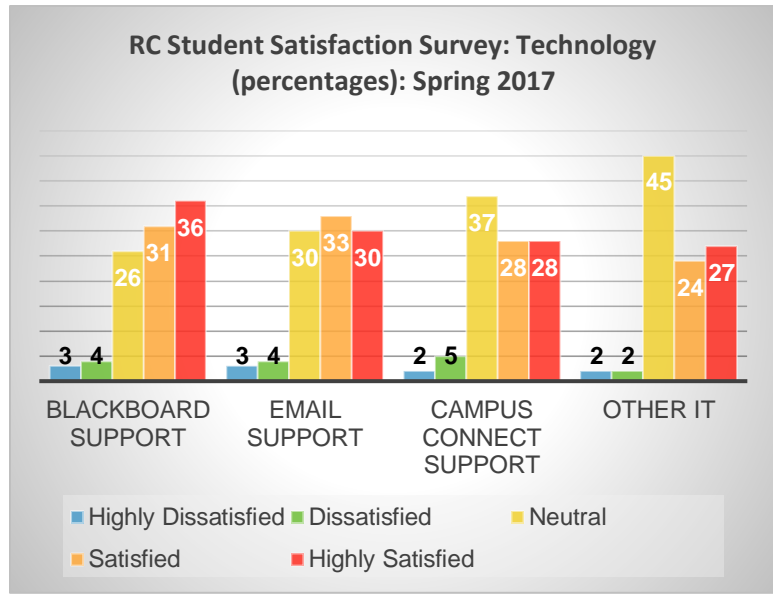
1d. Hire IT Director and Retention Coordinator. RC planned to have two half-time employees oversee the IT department and retention activities, but it quickly discovered how unrealistic such a tiny staff would be. Currently, the College employs three full-time IT specialists and maintains a large training budget, and it has plans to expand the department to five full-time employees.

To help gather data on student retention using EAR, the College hired a part-time Retention Coordinator. After the initial hire, the duty of serving as Retention Coordinator has shifted between a couple of different individuals, and there is presently some question as to where responsibility for manning the system resides.

IMPACT. There have been shortcomings in the general usage of the EAR system. For instance, faculty mistakenly sent in their grade reports and retention reports to the Retention Coordinator using Google Drive instead of the EAR system during the first semester EAR was implemented. Additionally, while data have accumulated during the past five semesters of EAR's usage, they have not been effectively utilized to retain students. In somewhat parallel fashion, it emerged in 2017 that the Retention Coordinator had not been given clear instructions and expectations about how to make effective use of the data for increasing student retention. This means the office was not effective in deciphering and distributing critical retention data about attendance rates, grade trends, and so on. Therefore, the College does not possess hard data to support its hypothesis that attendance affects overall grades. Discussions are presently underway about the future of both the Retention Coordinator position and the EAR system. As for the expansion of the IT department, it has materially benefited students at the College by providing them with smoother and less error-prone access to Blackboard, email, Campus Connect (the student registration and information portal), and other vital online services.

1a-1d: Student Satisfaction. Unfortunately, part of the lack of continuity mentioned in the Executive Summary above involved the failure to administer an annual Student Engagement Survey as planned. The initial survey that was conducted as part of the original QEP research, and that produced rich data regarding student engagement and satisfaction with the College's technological infrastructure, was discontinued after just a single administration, on the grounds that such data could be gathered from other sources such as student course evaluations and external survey data (e.g., the CCSSE and SENSE). Follow-through on the actual implementation of this shift was somewhat

soft—for example, a plan to introduce a suite of technology-focused and e-learning focused questions into the course evaluations was not successfully carried out—resulting in an inadequate collection of data regarding student attitudes toward and experiences with the College’s technological infrastructure and e-learning initiatives over the past five years. Moreover, the CCSSE and SENSE do not, in fact, contain questions in their standard surveys that address the specific issues the College needed to focus on for the QEP. The meeting of this particular target for Outcomes 1a through 1d is therefore a matter of some confusion. It does appear, though, that a soft confirmation of its being met can be obtained from limited aspects of student course evaluations, as



well as from a general Student Satisfaction Survey, covering many aspects of RC, that was administered in Spring 2017. For the former, RC’s standard course evaluation contains an item that asks whether the instructor made effective use of Blackboard. This question appears in all course evaluations, both for online classes and for face-to-face ones. For the Spring 2017, Fall 2017, and Spring 2018 semesters, the percentage of students across all course sections of all types who agreed or strongly agreed that their instructor used Blackboard effectively was 77, 79, and 78, respectively. For the latter, the Spring 2017 Student Satisfaction Survey contained a question asking students to rate their satisfaction with four areas of RC’s technological support: Results of this question are illustrated in the chart at right. For RC to move from a circumstance where, as described in the original QEP, students expressed predominantly negative opinions about the College’s technology and technological support, to one where negative opinions are a tiny minority, and some areas show strongly positive attitudes (as in student satisfaction with Blackboard in particular), represents an important step forward.

Objective 2 Assessment			
OBJECTIVE 2 Improve faculty expertise in use of instructional technology	Key Performance Indicator	Target	Result
Outcome 2a Professional Development: Blackboard	To increase faculty knowledge in Blackboard LMS. Target: 100% of faculty will complete Blackboard training	100%	Not met
Outcome 2b Professional Development: Hardware and Integration Methods	To increase faculty knowledge in usage of SMART Boards, ITV Tandberg systems, and integration of technology methods. Target: 100% of ITV instructors and 100% of faculty who have access to SMART Boards will complete training.	100%	Partially met (see discussion)
Outcome 2c Professional Development: MyMathLab	To increase math faculty knowledge and usage of MyMathLab software. Target: 100% of math faculty will complete MyMathLab training.	100%	Met

Objective 2 Discussion

2a. Training in Blackboard LMS. The QEP objective of providing all faculty with Blackboard training got off to a good start in 2014, with all full-time faculty attending at least one training session, and a number of them attending more than that. It proved difficult, however, to maintain consistent, and consistently updated, training for a constantly shifting faculty roster. The objective of ensuring that all faculty receive Blackboard training has proved elusive. That said, in the summer of 2018 the College's IT director began making preliminary plans for Blackboard training to be standardized for all faculty. There is presently no date set for completion and implementation of this plan, but it remains a live issue.

IMPACT: The failure to provide Blackboard training to all faculty has resulted in decreased effectiveness of Blackboard as a tool to improve student learning across the board, as students find that expectations about both the instructor's use and their own use of Blackboard are inconsistent from class to class. Nevertheless, a number of instructors exploit Blackboard's capabilities quite extensively, including face-to-face instructors who use the system as a means to supplement and enrich classroom instruction and keep students more engaged between class meetings.

2b. Training in Hardware Equipment and integration of technology methods. As already described, RC's implementation of SMART Boards did not go as planned. Training halted as the faculty realized the equipment failed to engage students in effective pedagogy given the specifics of the classroom environment. The College also purchased Life-Size equipment (a cloud-based ITV system) in 2017 to supplement the existing Tandberg ITV equipment. but it has now been replaced by Zoom (see below).

IMPACT: With the apparent failure of the SMART Board portion of the QEP hardware plan, an expensive lesson was learned: Hardware must be simple and must be carefully assessed for its applicability to existing conditions if its use is going to be cost-effective and conducive to improving student learning and its contextual environment. With this in mind, the College has now shifted its focus to providing students with laptops, calculators, document cameras, projectors, mobile apps, and interactive student clickers. A second lesson is that each new technology comes with additional training needs. This was already recognized at the outset, but the experience of implementing the QEP has underscored it.

Ranger College is currently replacing its aging ITV systems with a state-of-the-art Zoom system that provides a point-and-click, user-friendly experience. With reduced training and technical savvy necessary to use this new system, RC expects to see smaller loss of signal and fewer IT Helpdesk needs. The greatest concern about ITV among students has been the question of whether the original system will actually work on any given day. Zoom addresses this concern and provides the capability to stream a high definition college education across rural Texas. Using these new cloud capabilities, the IT director can provide access to any student, anywhere, without he or she needing access to expensive ITV equipment, as video can be streamed to personal digital devices. This will help tremendously with RC's small dual credit partner schools, which cannot afford the Tandberg system. It will also help with general communication among the College's various sites. Now the Director of Library and Learning Resources, Financial Aid Office, Counseling Office, Registrar, advisors, etc., can hold office hours in all locations with off-campus centers and dual credit high schools, thus giving all students better access to services on the main campus regardless of location. In addition, the technology allows meetings to be held in real time between main campus personnel and personnel located at off-campus Centers and dual credit sites.

2c. Training in MyMathLab software. All full-time math faculty have been trained in MyMathLab, the textbook publisher-provided software platform for mathematics homework completion, online tutorials, interactive videos, and direct email access to the instructor. It is also accessible 24/7 and is the sole platform for online-only mathematics classes. Using MyMathLab, students in developmental math courses now receive an individual educational plan. Through a MyMathLab diagnostic, students receive content based on their needs.

IMPACT: Math students now access grades, test, and all assignments through MyMathLab. This single repository for math education provides ease of access for both students and faculty, and it enables faculty and

their Division Chair to follow student progress more efficiently. The MyMathLab software is updated quarterly, with new content being evaluated four times each year. Regarding any impact on student learning, see the information and discussion for Objective 3, below.

Objective 3 Assessment			
Objective 3: Enhance instructional course design for increased student engagement	Key Performance Indicator	Target	Result
Outcome 3a Electronic Course Access: Blackboard Curriculum	To increase student access to course curriculum online. Target: 100% of courses will be accessible on Blackboard in standardized format; presently 17%.	100%	Not met
Outcome 3b Attendance reporting/ Early Alert System	Increase student attendance/retention as measured by the 4 week and end of semester Attendance Reports. Target: 4 weeks—DMAT 0313—85%, MATH 95% will miss less than 4 times Target: end of semester—DMAT 0313 and MATH 1314—50% will miss less than 4 times	<u>4 weeks:</u> DMAT 0313-85%, MATH 1314-95% will miss less than 4 times <u>End of semester:</u> DMAT 0313 & MATH 1314—50% will miss less than 4 times	See discussion
Outcome 3c Curriculum redesign: Technology integration in targeted courses	Increase student success rates by 10% in targeted courses from DMAT 0313 baseline of 55% (2011) to 65%, and from MATH 1314 baseline of 58% (2011) to 68%. To increase retention/progression percentage of students who begin in DMAT 0313 and who complete MATH 1314 from baseline of 4% (2012) to 25%. To increase post-test student learner outcomes by 25% from pre-test. Target: DMAT 0313 from baseline 6% (Spring 2013) to 25% and MATH 1314 maintain baseline 25% (Spring 2013) rate To improve student engagement as measured by the self-rated Student Technology Engagement Instrument (Active and Collaborative section). Target: DMAT 0313 from 42% to 65%, MATH 1314 from 38% to 60%	DMAT 0313: 65% MATH 1314: 68% 25% of entering DMAT 0313 25% DMAT 0313-65% MATH 1314-60%	DMAT not met, MATH 1314 met, but see discussion Not met Exceeded See discussion

Objective 3 Discussion

3a. Electronic Course Access: Blackboard Curriculum Alignment. As obliquely alluded to in the discussion of 2a above, minimum/base-level requirements for faculty usage of Blackboard—not just for online faculty, but for all faculty—were established in conjunction with the QEP, with all faculty being required to use Blackboard announcements, post their syllabi in Blackboard, and use the Blackboard gradebook. These requirements were to be communicated through the planned mandatory training and through regular communication from the Vice President

of Instruction and the Associate Vice President of Administration. The failure to meet the goal of universal faculty training hindered this plan. Currently, around 90 percent of RC faculty members post the QEP-required information to their Blackboard courses, although use of Blackboard's gradebook has lagged behind the other requirements.

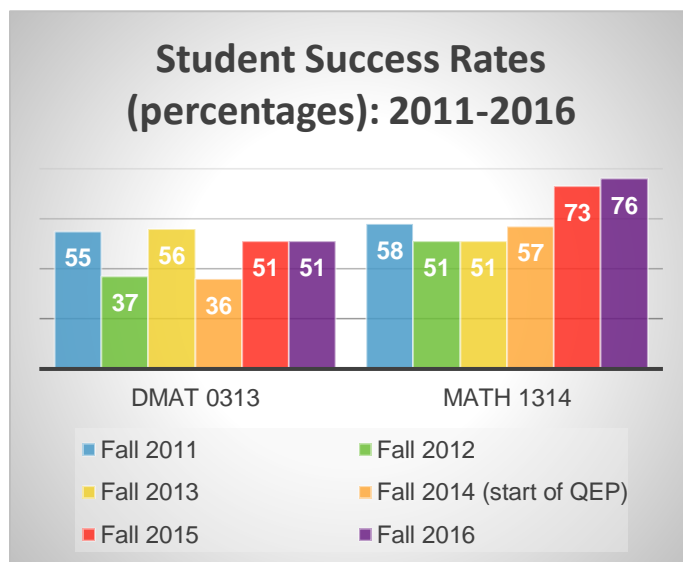
IMPACT: For classes in which faculty use Blackboard in the prescribed manner, students have real-time access to grades for every course, as well as 24/7 access to faculty announcements and the course syllabus. The disparity between the majority of classes that make correct use of Blackboard and the minority that do not presents a bit of a difficulty and a confusion for students, as they have, by and large, come to regard Blackboard as a normal, even an essential, part of each course.

That said, it has been interesting to witness a distinct rise in communication between faculty and students via Blackboard, including out-of-class communication by face-to-face students. Relatedly, email communication has significantly increased during the past five years. Faculty report an estimated volume of three to five individual student emails arriving per day during regular class week. Perhaps related to this is the fact that many faculty are transmitting supplemental course resource documents directly to students via Blackboard. Specific courses impacted in this manner include developmental math, MATH 1342: Elementary Statistical Methods, and MATH 1332: Contemporary Mathematics.

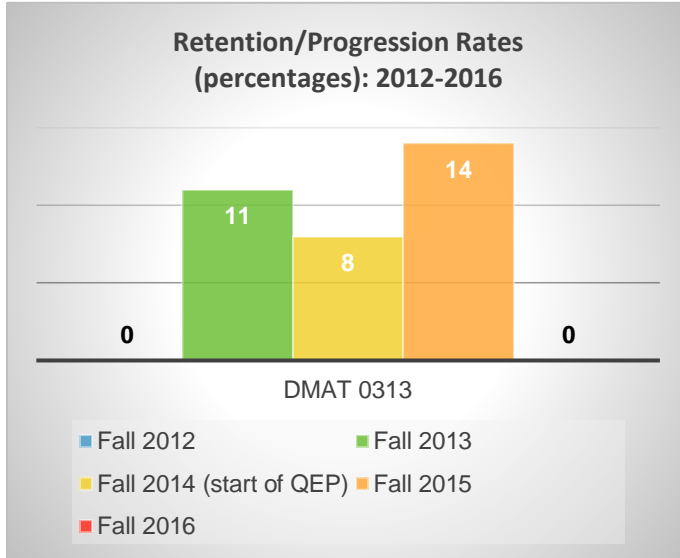
3b. Implement Student Attendance Reporting/Early Alert System. Problems with the EAR system have already been described above in the discussion for 1d.

IMPACT: Failure to make use of the available data and to use the EAR system in an overall effective manner have made it impossible to assess the impact or success of outcome 3b.

3c. Curriculum Redesign: Technology Integration in Targeted Courses. For the **success/completion target**, math faculty focused on increasing student success rates in the target math classes by 10 percent, with success defined as completing MATH 1314: College Algebra with a grade of C or better, or DMAT 0313: Beginning Algebra and Geometry with a grade of B or better, as opposed to a DFWIQ. The assumption or hypothesis was that engaging students with technology while simultaneously deploying retention efforts using EAR would lower the DFWIQ rate, which is to say, increase the success rate. The hope was that students would be less prone to dropping, failing, or underperforming if teachers could engage with them through technology-enabled means at critical moments, with help for identifying such moments being provided by the Retention Coordinator through an analysis of EAR data. As stated above in the section on changes to the QEP, after two years of data collection it was recognized that a clear line of correlation could not be drawn between the new technological integrations and the student success rate, as a host of factors besides MyMathLab or any other technological enhancement may play into a student's decision to drop a class, or the student's failure to achieve a C or better.



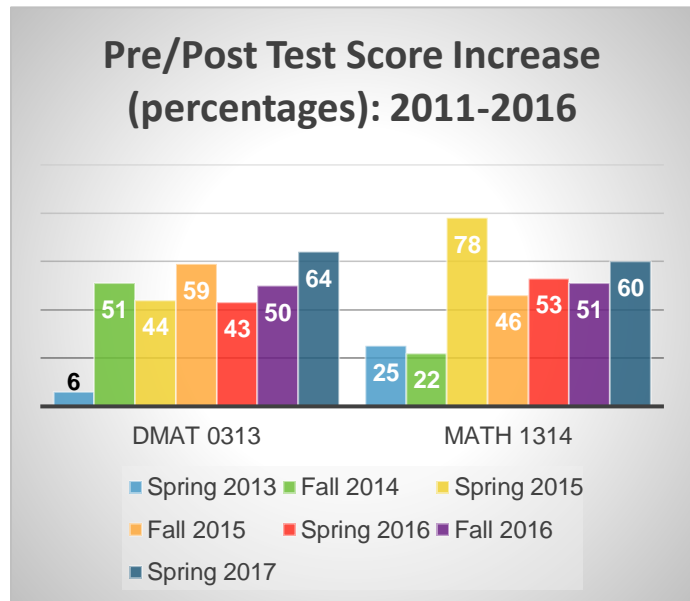
For whatever it may be worth, success rates for MATH 1314: College Algebra rose from a fall baseline of 58 percent to 76 percent in Fall 2016. In other words, the target was met, and the increase was steady after the implementation of the QEP in 2014. It is just the case that the College cannot categorically attribute the trend to implementation of the QEP. For DMAT 0313, by contrast, beginning from the Fall 2011 baseline success rate of 55 percent, the rate dropped during the first year of the QEP's implementation and then recovered—but only to a rate of 51 percent. The target was thus not met. The chart at right illustrates these numbers.



For the **retention/progression target**, math faculty focused on increasing the number of students who began in DMAT 0313 and went on to successfully complete MATH 1314, beginning with the 2012 baseline of 4 percent. Note, however, that a late-arriving final course grade for 2012 showed that the baseline number written into the QEP was in error; the actual 2012 baseline was 0 percent, as a student who had been expected to succeed in DMAT 0313 ended up earning a D. In any event, the retention goal for DMAT 0313 was not met. The assumption/hypothesis was that engaging with e-learning would result in a steady increase in the DMAT 0313 retention/progression rate. As described in the section of this impact report on changes to the QEP, DFOM 0313, MATH 1332, and MATH 1342 were later added to the courses being tracked, with completion of either of the MATH

courses by a student who had started in DFOM representing successful retention. However, a baseline and target were not formally set for this added retention objective. Moreover, DFOM was not launched as part of the College’s developmental math program until 2015. Thus, only two cohorts’ worth of data have been amassed, and they are inconclusive, with a Fall 2015 persistence rate of 29 percent and a Fall 2016 persistence rate of 25 percent. The chart at left above illustrates the retention results for the DMAT 0313 cohorts only. Again, the ability to correlate any of these results with the integration of the new technology is attenuated, this time due to the failure of the data to establish a clear trend. It may also be the case that a span of five years is insufficient to legitimately rationalize a trend for this data and for the effect of the technological transformations in question. Regardless of the reasons, the end result is that, in statistical terms, the null hypothesis—that there is no correlation between technological engagement and improved student learning in these areas—cannot be rejected.

For the **pre/post-test target**, faculty desired to see an increase of 25 percent in student scores from the pre-test to the post-test that was developed for administering to students in DMAT 0313 and MATH 1314. This would represent a 19 percent increase for DMAT students and the maintaining of baseline scores for MATH 1314 students. The result met, and in fact exceeded, the target for both courses, perhaps indicating the positive impact of MyMathLab and/or other e-learning technological transformations and integrations (e.g., Blackboard). However, the variability of semester scores, with alternate rises and drops in post-test score improvement levels throughout the period tracked, and with a massive surge in the improvement level for MATH 1314 in Spring 2015 followed by a dramatic drop and a failure to achieve the same level for several subsequent semesters, confuses the matter. The chart at right illustrates these results.



REFLECTION

“Engage with E-Learning” was intended to increase Ranger College’s technological capabilities and to integrate these capabilities into the College’s educational programs for the purpose of enhancing student learning. As it turns out, the question of whether or not the QEP’s goals for student learning were achieved—or, more accurately, of whether or not the attempt to engage students with e-learning was correlated with any learning improvements that occurred—is ultimately unanswerable given the plan’s original design. Nevertheless, one thing is abundantly clear: The QEP ended up producing a dramatic systemic change for the entire RC system. With the new technological infrastructure that has been built and cultivated over the past five years, RC has enhanced its distance learning capabilities; enabled a dramatic expansion of its dual credit program; acclimated faculty to new technologically facilitated ways to improve, supplement, and deliver instruction to students; improved student experiences with the College’s technological infrastructure; and positioned itself to deliver a high-quality education to a growing number of students who would otherwise go unserved. Through this QEP, RC has learned that for IT solutions to be helpful and beneficial, they must be clearly targeted and deployed, with clear delineations of responsibility for ownership, training, and care and feeding. Technological complexity is also an important issue, as faculty quickly become frustrated when a given piece or type of technology (e.g., ITV) requires a large investment of time to learn its use, and worse, sometimes fails to work properly, so that the perceived return on investment of time and effort is minimal.

The QEP was intended to engage students with E-learning, and a good way to gauge the ultimate result is to consider the words of frontline faculty and staff who have worked directly with students in this endeavor. For this report, RC asked its academic division chairs and IT director to describe the impact of increased technological engagement on students and the College in general. We close this report with their words.

Dr. Norman Fletcher, Chair of the Mathematics Division: “Internet availability has increased significantly with the QEP. Students can now access the Internet from virtually any location on campus, whereas formerly the Internet was frequently unavailable in dorms, several classroom locations, and the library. Our use of computer management systems (MyMathLab and Blackboard) has increased student awareness and use of Internet support for mathematics courses. Our purchase and distribution of handheld calculators has improved students’ ability to complete assignments in statistics and contemporary mathematics courses as well as STEM college-level courses. Online students can now access the same course support elements as on-campus students. Expanded use of Blackboard and EAR periodic grade assessments have increased students’ awareness of academic progress during the semester.”

Lance Hawvermale, Chair of the Division of Humanities and Fine Arts: “In my eight years at Ranger College, technology has advanced by leaps and bounds. Things have changed for the better almost every year. My classroom depends on the constant use of technology. I begin my day by connecting via an ITV unit to six separate dual-credit classrooms. Technology permits me to instruct multiple campuses simultaneously. When combined with Blackboard, our virtual classroom is able to share and enjoy videos, MP3s, and interactive slideshows. By working with educational service centers in Abilene and Fort Worth, Ranger College is able to bring distant classrooms together for a cohesive learning experience. Meanwhile, in my ‘traditional’ classes, technology allows me to engage the students in ways relevant to their chosen environments. We often access online resources in real time during class, demonstrating the practical application of the concepts we discuss. This results in improved student note-taking and increased engagement.”

Dr. Jerry Glidewell, Chair of the Division of Science: “Prior to the QEP implementation in 2013, science classrooms were equipped with old-fashioned overhead projectors, with notes presented as acetate sheet projections. Class notes were distributed as Xeroxed copies, individual emails, or hand-copied sheets. This method of delivery precluded the use of PowerPoint. Study and review exercises were delivered in the same way. As the QEP developed, the old overhead projectors were replaced by digital projectors and laptop computers, allowing the use of much more efficient and powerful PowerPoint presentations. This significantly improved the quality of lectures in class. At this time faculty were also trained in the use of PowerPoint and other programs. Another important improvement through the QEP involved the introduction of Blackboard as a method of sharing class materials. Class notes and related study and review materials became readily accessible to students at any time and place.”

Glenn Paul, Director of the IT Department: “Though Internet access significantly improved at RC from 2015 to the fall of 2017, the College lacked sufficient IT personnel to manage it appropriately. CenturyLink was contracted to provide managed network services, and overall network performance was therefore suppressed by support services too far removed from the school. In the fall of 2017, I was hired as the new IT Director, and I brought to RC the expertise to provide in-house monitoring, management, and incident response. Since that time, additional tools and technologies have been implemented to allow better overall use of RC Internet access. While the original ITV rooms were an effective concept, their full potential was truncated because of incongruent equipment. Furthermore, the vendor selected for implementation proved to be disappointing. During the summer of 2018, RC assessed the impact of ITV issues and resolved to implement a web-based, hardware-independent technology as a full replacement. In addition to simplifying the delivery of virtual classrooms, ZOOM (the ITV replacement) will add many new features, including bringing the classroom directly to the palm of each student’s hand, independent of room or campus.”

ORIGINAL EXECUTIVE SUMMARY

Below is the QEP overview that was originally submitted to SACSCOC in 2014.

“ENGAGE WITH E-LEARNING

The Quality Enhancement Plan of Ranger College focuses on increasing student success and student learning by engaging students through the use of technology. Student success is the highest priority of Ranger College; it is part of our strategic plan, and it is also addressed in our mission.

The QEP addresses the goal of student success through engaged learning in the following ways: Ranger College will: 1) improve the technology infrastructure on campus, 2) improve faculty expertise in the use of instructional technology, and 3) enhance instructional course design for increased student engagement. Several possible choices existed for the focus of the QEP, but it was determined, through data collection and committee and departmental meetings that improving our use of technology would be the most beneficial choice. Ranger College is located in a rural geographic area of Texas, and therefore the combination of online classes and interactive television (ITV), together with traditional face-to-face instruction, ensures that quality educational services are delivered to our students. The QEP’s title, “Engage with E-Learning,” illustrates that improved technology helps make this possible and strengthens student engagement.

Strategies for Objectives

- 1) Ranger College will improve the technology infrastructure on each campus and at each off-site location by:
 - a. Increasing Internet access (improved bandwidth and access points)
 - b. Increasing hardware (Blackboard server, Tandberg systems (ITV), additional computers in libraries and labs, additional computers for faculty, SMART Boards)
 - c. Increasing software (Microsoft licenses, Blackboard integration software, absence/early alert Software)
 - d. Expanding staffing to include IT Director (technology support) and Retention Coordinator (student support)
- 2) Ranger College will improve faculty expertise in the use of instructional technology through:
 - a. Professional development training for Blackboard software
 - b. Professional development training for SMART Boards, ITV equipment, and integration of technology methods
 - c. Professional development training for MyMathLab
- 3) Ranger College will enhance instructional course design for increased student engagement by:
 - a. Ensuring that 100% of courses offered will be student-accessible on Blackboard LMS in a standardized format
 - b. Implementing student attendance reporting/early alert system
 - c. Initiating a curriculum redesign to integrate technology into targeted courses (developmental mathematics and college algebra were selected as the focus of the re-design)