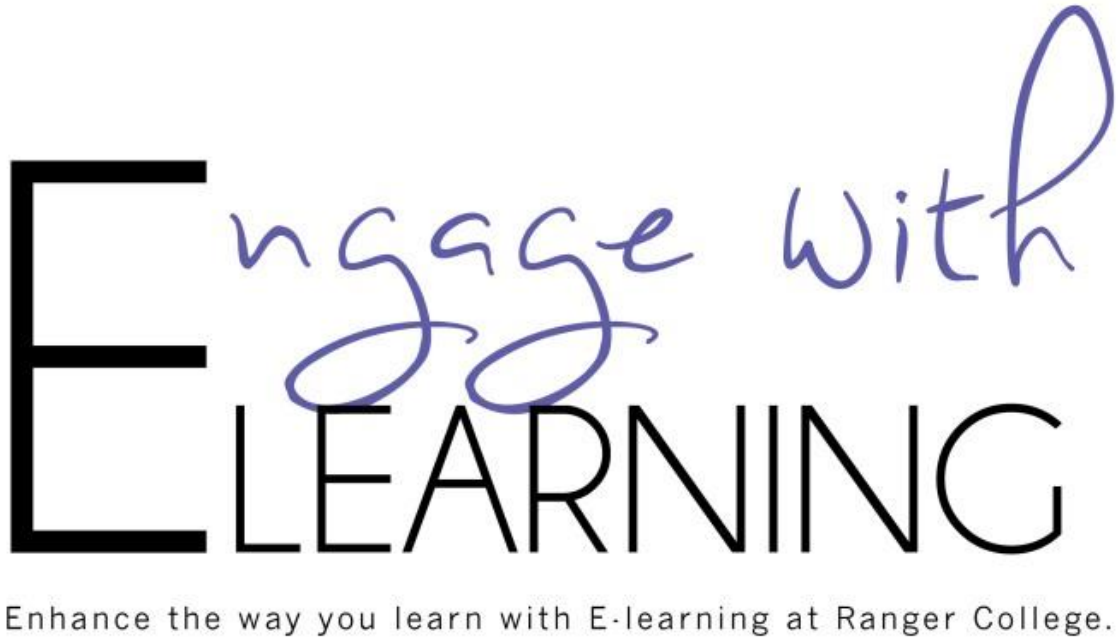

Quality Enhancement Plan

Ranger College

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I. Overview

In 2011, *Community College Week* cited Ranger College as the fifth-fastest-growing two-year college in the nation (Community 8). Ranger's enrollment of approximately 2000 students includes not only 400 residential students on our home campus, but commuter and nontraditional students at our satellite campuses and dual-credit students from area high schools.

Early discussions of a potential Quality Enhancement Plan (QEP) for Ranger College suggested many possibilities to address areas of perceived need, such as reading skills or developmental math courses, but an examination of the data and diverse input from the college community indicated a much different path was more appropriate. Our rapid rise in student population, our increasing number of partnerships with area Independent School Districts, and our growing campuses in neighboring counties eventually resulted in a QEP more suitably matched to our unique academic community. Our QEP, **Engage With E-Learning**, addresses the needs of our highly diverse and geographically separated campuses:

> **The focus of the Quality Enhancement Plan is to increase student success and student learning by engaging students through the use of technology.**

Ultimately the QEP intends to fulfill three primary objectives:

Objective 1: Improve campus technology infrastructure.

Objective 2: Improve faculty expertise in use of instructional technology.

Objective 3: Enhance instructional course design for increased student engagement.

These three objectives will ultimately increase student learning. Educators at all levels measure their success by the degree to which learning occurs in their classrooms. With this in mind, the various subcommittees charged with examining portions of the QEP were encouraged

to frequently ask themselves, "How will this improve student learning?" **Engage With E-Learning** is specifically designed to answer that question.

In order to achieve these objectives, our curriculum must align with our ability to effectively deliver that curriculum. The QEP ensures that all campuses are employing the best technology practices to deliver content in new ways, ways that are meaningful to the contemporary student, ways that Ranger College has been unable to explore in the past.

Based on the needs of the college as evidenced in the data collected, one developmental course (DMAT 0313, Beginning Algebra and Geometry) and one gateway course (MATH 1314, College Algebra) were chosen as the focus for curriculum redesign and assessment of student learner outcomes for this QEP.

What is E-Learning? Ranger College defines "e-learning" as much more than simply those courses that are delivered online. In fact, e-learning doesn't necessarily require the internet at all. E-learning encompasses a wide array of classroom activities that are enhanced by multimedia and interactive opportunities for students to engage more directly with the material. E-learning enriches a classroom by helping the instructor present audio, streaming video, podcasts, animation, satellite feeds, television, slideshows, and local intranet-based activities. The delivery methods can include web-based training (WBT), computer-based training (CBT), or any type of virtual learning environment (VLE). E-learning can be self-paced (asynchronous) or instructor-led (synchronous). When employed in face-to-face teaching settings, it is sometimes referred to as "blended" learning.

Table 1: Summary of Evidence for QEP Guidelines

Indicator	Evidence	Section Detailing Evidence
CR 2.12 **An institutional**	Ranger College identified its topic by surveying students, administrators, faculty	Process Used to Identify the QEP

Indicator	Evidence	Section Detailing Evidence
process	(full-time and adjunct), the Board of Regents, and community members. Topics were considered based on institutional needs. Other factors considered included: • Impact on student learning • Student attendance • Student success data • Technology surveys • Use of college resources	
CR 2.12 **Key issues identified that emerge from institutional assessment**	Ranger College reviewed and analyzed annual data at Administrative Council meetings, Student Success by the Numbers (SSBTN) meetings, and faculty and staff development session, including results from the Community College Faculty Survey of Student Engagement (CCFSSE), Community College Survey of Entering Student Engagement (CCSSE), and the Survey of Entering Student Engagement (SENSE). Additional information considered included data on student success, student attendance, technology needs, and retention. The results indicate a need to improve student engagement for increased student learning.	Process Used to Identify the QEP
CR 2.12 **Focus on learning outcomes and accomplishing the mission of the institution**	The college mission provides for teaching and learning opportunities in foundational course to make students successful members of the academic community. The QEP's student learner outcomes (SLOs) support this mission. Accomplishing QEP goals directly improves student performance in Beginning Algebra and Geometry (DMAT 0313) and College Algebra (MATH 1314).	Objectives, Measures and Outcomes
CR 2.12 **Focus on the environment supporting student learning and accomplishing the mission of the institution**	The QEP improves the technology environment for faculty and students, resulting in increased student engagement through diverse methods of learning. The result of increased student learning supports the mission of the institution.	Actions to be Implemented
CR 3.3.2 **Capability to initiate the plan**	Ranger College has committed sufficient funds and other resources to provide for all aspects of the QEP's actions, including	Budget and Resources

Indicator	Evidence	Section Detailing Evidence
	infrastructure, training, travel, personnel, and equipment.	
CR 3.3.2 **Capability to implement and complete the plan**	The QEP document provides details of a phased implementation, including budget needs and assessment procedures. The QEP increases student engagement through the integration of technology. It concentrates on outcomes in two specific math courses and can be realistically completed by the end of the proposed timeline.	Budget and Resources Implementation Timeline
CR 3.3.2 **Broad-based involvement of institutional constituencies in the development of the plan**	The topic-selection process involved every aspect of the campus community. Surveyed groups and committees were represented by students, faculty, staff, Board members, and area residents. They studied potential topics based on the college's needs and the topic's ability to have a long-lasting impact on student learning. A twenty-person committee gathered data from these constituencies and identified the final QEP topic based on the consensus of all stakeholders.	Process Used to Identify the QEP
CR 3.3.2 **Broad-based involvement institutional constituencies in the proposed implementation of the plan**	The various teams charged with implementing the actions of the QEP draw upon the expertise found in all sectors of the campus community, from vice presidents and Board members to student-athletes and local residents. Our goals will not be possible without the direct support of everyone involved with the college. The QEP committees work closely with the Administrative Council and the President.	Involvement of All Constituencies
CR 3.3.2 **Identified goals for the quality enhancement plan**	The QEP's goal is to increase student learning by engaging students through technology. The three goals of the QEP include: (1) improve campus technology infrastructure, (2) improve faculty expertise in use of instructional technology, and (3) enhance instructional course design for increased student engagement.	Actions to be Implemented Objectives, Measures and Outcomes Assessment
CR 3.3.2 **A plan to assess the achievement of the goals of the Quality**	The QEP assesses student learning outcomes, retention, student success, and student engagement. Assessment methods are qualitative and quantitative, including direct	Implementation Timeline Assessment

Indicator	Evidence	Section Detailing Evidence
Enhancement Plan	and indirect measurements, and formative and summative assessments.	

Organizational Structure: Though the QEP committee represents all parties involved with the college, it could not operate without the support of other entities. Together these separate services form a QEP network.

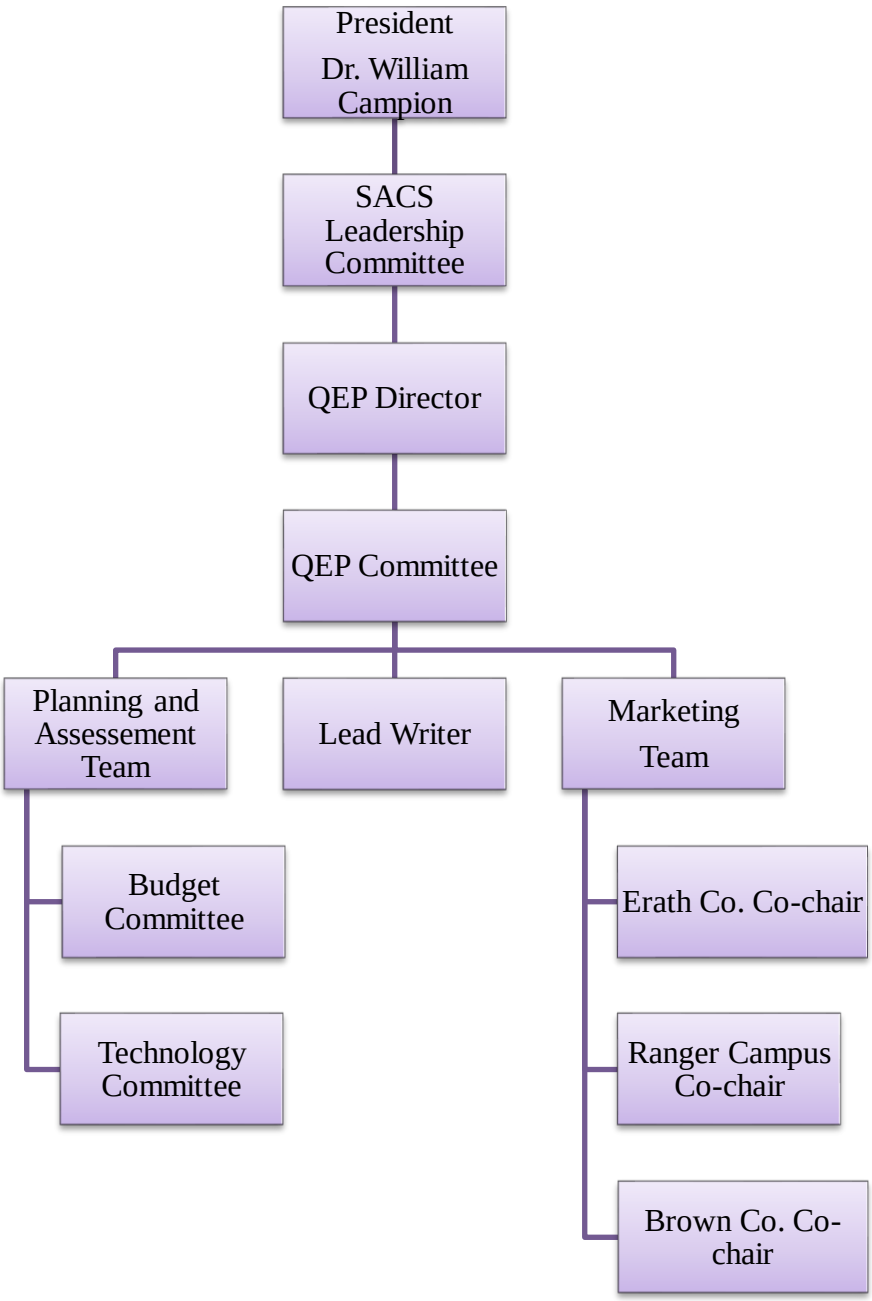


Table 2: Summary of QEP Planning Activities	
Administered faculty and student QEP Topic Survey	Spring 2011
Visited Del Mar College's QEP and SACS committee in Corpus Christie, Texas, attended by faculty and institutional leadership	July 2011
Initial QEP Committee consisting of faculty reviewed QEP Topic Survey results and assessment data and narrowed topic results	Fall 2011
SACS Annual Conference, Orlando Florida, attended by CFO and Faculty Association President; Ranger College received one-year delay in reaffirmation process	December 2011
Committee adopted the QEP broad topic: Technology	December 2011
President appointed new QEP Director	January 2012
Established QEP Leadership Team and committees	January 2012
QEP Director recommends topic of technology to Board of Regents	January 2012
Committee began process of defining focus with supporting goals	February 2012
Committee began research of best practices and current literature	Spring 2012
Marketing Committee held slogan/logo contests for students, faculty/staff/administration, Board, and community	February 2012
Texas Community College Convention, Frisco, Texas on Integration of technology into curriculum, attended by QEP Director and faculty	March 2012
Defined QEP outcomes and began planning timeframe	March 2012
SACS Small College Initiative, Atlanta Georgia, attended by QEP Director and SACS Coordinator	April 2012
National Institute for Staff and Organizational Development, Austin, Texas, attended by members of Leadership team and faculty	May 2012
Marketing committee adopted final slogan/logo	Summer 2012
Implementation of infrastructure phase began	Summer 2012
Marketing committee began initial planning	Summer 2012
SACS Conference, Atlanta Georgia, attended by QEP Director and Math Division Chair	August 2012
Board focus group and community input	September 2012
Baseline/target outcomes planning began	October 2012
QEP Workshop, SACS Annual Conference, Dallas, Texas attended by QEP Director and QEP Lead Writer	December 2012
Assessment planning began with Math Division for student learner outcomes (SLOs)	January 2013
Texas Community College Convention, Houston, Texas on Teaching with technology in mathematics, attended by QEP Director and faculty	February 2013
Baseline and target outcomes established	Spring 2013
Writing of the QEP document began	Spring 2013
Budget finalized and approved by the Board	August 2013

II. Process Used to Identify the QEP

Determining the Topic

In 2011, students and faculty participated in a general survey of what they believed to be barriers to student success, ranking those items in order of perceived importance. Based on casual discussions, one early possible topic that the QEP might address was developmental mathematics. Other suggestions included reading skills, improved student attendance, access to reliable technology, student engagement, or the development of critical-thinking ability.

Table 3: Potential Topic Selection Survey - Barriers to Student Success

Student Response	Faculty Response	Combined Average
1. Math skills	1. Critical thinking skills	**1. Lack of technology**
2. Lack of technology	2. Reading skills	2. Reading skills
3. Reading skills	**3. Lack of technology**	3. Math skills
4. Writing skills	4. Communication skills	4. Writing skills
5. Lack of tutoring	5. Math skills	5. Communication skills

A six-person QEP "exploratory" committee was formed in the fall of 2011, charged with taking these initial findings and gathering further data so that a potential QEP topic might come into sharper focus.

Table 4: QEP Exploratory Committee Members

Dr. Elizabeth Price, Chair	Retention Coordinator
Lance Hawvermale	Assistant Professor of English, Webmaster
Dr. Norman Fletcher	Professor of Math, Math Division Chair
Jason Bacon	Instructor of Math
Kathleen Flournoy	Associate Professor of History
Linda Gann	Professor of Business, Workforce Division Chair

The members held numerous meetings throughout the semester, and it quickly became apparent that a concentration on developmental math, for example, did not address the college's greatest needs. The challenges facing Ranger College were bigger than any single department.

Data-Informed Decision-Making

While exploring potential topics and examining known problem areas, the committee gathered additional data, paying particular attention to those areas related directly to student success; no matter what the QEP's final form, it would be designed as a vehicle for student success. Data drove the committee's decisions as its members refined the QEP, paying particular attention to the areas of student success, attendance, engagement, and retention.

Student Success

One area of concern was "DFWIQ," or the number of students who do not succeed in a particular course but instead receive a grade of "D" or "F," or withdraw (W), fail to complete the necessary work (I), or simply quit all coursework and leave school (Q).

Table 5: DFWIQ Rate (All Courses Minus Activity PE)

TERM	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Fall	27%	25%	32%	31%	30%	27%	24%	33%	28%	29%	26%
Spring	28%	25%	25%	27%	26%	30%	26%	24%	30%	26%	TBA
Average	27.5%	25%	28.5%	29%	28%	28.5%	25%	28.5%	29%	27.5%	TBA
Overall Average: 27.65%											

Nearly 28% of all students in all courses do not achieve a satisfactory level of success. In other words, over one-quarter of the student body fails to succeed on a semester-to-semester basis. Compared to other developmental courses, math clearly shows the lowest level of student success:

Table 6: Comparison of Developmental Math and Reading DFWIQ Rates

Course	Fall 2007	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012
DREA 0313	29%	42%	36%	18%	49%	25%
DREA 0323	23%	13%	34%	14%	63%	14%
DREA 0333	20%	45%	46%	9%	57%	0%

Table 6: Comparison of Developmental Math and Reading DFWIQ Rates						
DMAT 0303	55%	76%	71%	39%	66%	42%
DMAT 0313	66%	79%	52%	33%	55%	63%
DMAT 0323	86%	78%	NA	19%	67%	73%

The table below shows the DFWIQ percentages for Ranger College's highest-enrollment non-developmental courses. Among these, MATH 1314 has the highest attrition rate.

Table 7: Fall 21012 DFWIQ Rate -- Five Highest-Enrollment Courses							
Course	**Enrolled**	**D**	**F**	**W**	**I**	**Q**	**Total DFWIQ**
BIOL 1406	167	19	17	22	0	5	**38%**
ENGL 1301	475	30	41	18	1	13	**22%**
HIST 1301	514	28	29	10	2	15	**16%**
MATH 1314	352	38	68	59	0	10	**50%**
SPCH 1315	242	0	25	14	1	6	**19%**

The DFWIQ percentage is one of the metrics that Ranger College hopes to improve by the implementation of **Engage With E-Learning**, and math courses seem to be strong candidates for being the first classes to introduce the changes brought about by the QEP.

Graduation and retention rates must also improve. The number of students either graduating with an associate's degree or returning to Ranger for continued education has improved in recent years but still hovers just below 40%.

Table 8: Persistence of First-time, Full-time Students		
	FY 2010	FY 2011
Total	36.8%	39.9%

The majority of Ranger students needed at least one developmental (remedial) course before advancing to mainstream coursework such as College Algebra and English Composition. Numerous studies have shown that students in developmental classes are less likely to graduate than students not requiring such courses (Renner).

Table 9: Assessment and Placement							
Required to take a placement test		**Took a placement test**		**Needed at Least One Developmental Course**		**Required to Enroll in Development Courses**	
Less than Full-time	**Full-time**	**Less than Full-time**	**Full-time**	**Less than Full-time**	**Full-time**	**Less than Full-time**	**Full-time**
88.0%	78.8%	80.0%	75.4%	52.0%	55.9%	48.0%	53.1%

Student Attendance

Absences continue to present a challenge. Class attendance contributes to a student's overall success (Section IV: Literature Review). In spring of 2012, over 200 students on the Ranger campus alone had already missed at least two class meetings within the first two weeks of school, and by the middle of the semester, this number had ballooned to over 700.

Table 10: Absence Summary for Ranger Campus									
Spring 2012									
1/26/2012		2/9/2012		2/23/2012		3/8/2012		3/29/2012	
More Than 2 Classes Missed	226	More Than 2 Classes Missed	318	More Than 2 Classes Missed	520	More Than 2 Classes Missed	683	More Than 2 Classes Missed	734
Fall 2011									
9/9/2011		9/22/2011		10/6/2011		10/20/2011		11/3/2011	
More Than 2 Classes Missed	251	More Than 2 Classes Missed	248	More Than 4 Classes Missed	377	More Than 4 Classes Missed	318	More Than 4 Classes Missed	574

Student Engagement

As detailed in Section IV: Literature Review, one method to improve overall student success is to increase student engagement in the classroom. *When surveyed, students indicated that the lack of reliable technology was a problem area and that interactive activities could improve their overall level of engagement.*

Table 11: Techniques to keep student comfortable, engaged in class	Ranger	Brown	Erath
Interactive/Hands-on	19%	No data	21.5%
Method of Preferred Learning			
Lab Work	14%	22.7%	28%
Group Projects	35%	18%	21%
Problem Areas for Students			
Access to reliable technology	20.5%	5%	8.65%

Comparative data reveal Ranger's standing against similar institutions and against "top-performing" colleges in various fields of student engagement, as indicated by the Community College Survey of Student Engagement (CCSSE).

Table 12: CCSSE Comparison of Student Engagement			
	Ranger College	**CCSSE Cohort**	**Top-Performing Colleges**
Active/Collaborative Learning	45.00%	50.00%	59.60%
Student Effort	45.50%	50.00%	57.40%
Academic Challenge	40.60%	50.00%	57.00%
Student-Faculty Interaction	41.90%	50.00%	58.10%
Support for Learners	49.80%	50.00%	58.60%

Ranger ranks significantly lower than the 50-percent benchmark of its cohort colleges in most categories of student engagement and distantly trails the top-performing schools.

Another potentially telling data set is that collected from faculty members in response to what is required of students in class. If student retention is a problem and requires an improved level of student engagement, the QEP committee examined class structures in general and assignments types in particular.

Table 13: CCFSSE Faculty Survey of Student Engagement (2011)						
	Students ask questions in class or contribute to class discussions		**Students make a class presentation**		**Students work with other students on projects during class**	
Response	**Full-time**	**Adjunct**	**Full-time**	**Adjunct**	**Full-time**	**Adjunct**
Very Often	18.8%	40.0%	0	20.0%	0	20.0%

Table 13: CCFSSE Faculty Survey of Student Engagement (2011)						
Often	18.8%	40.0%	18.8%	0	31.3%	0
Sometimes	62.5%	20.0%	18.8%	80.0%	50.0%	20.0%
Never	0	0	62.5%	0	18.8%	60.0%

Much like the CCFSSE data, the numbers reported by the Survey of Entering Student Engagement (SENSE) clearly revealed Ranger's low standing among similar two-year colleges.

Table 14: SENSE - Aspects of Lowest Student Engagement Comparative Scores				
Benchmark	**Item**	**Response**	**Ranger College**	**2011 SENSE Cohort**
Academic and Social Support Network	I knew how to get in touch with my instructors outside of class	Agree/ Strongly Agree	74.3%	87.6%
Engaged Learning	Frequency: Prepared at least two drafts of a paper or assignment before turning it in during the first three weeks of your first semester	At least once	58.6%	71.3%
High Expectations and Aspirations	Frequency: Turned in an assignment late during the first three weeks of your first semester	Never	48.8%	68.4%
Engaged Learning	Frequency: Worked with other students on a project or assignment during class during the first three weeks of your semester	At least once	67.7%	78.0%
High Expectations and Aspirations	Frequency: Skipped class during the first three weeks of your first semester	Never	56.1%	74.5%

Encouragingly, SENSE data demonstrated that Ranger College surpassed its cohort schools in many aspects, particularly in the areas of study groups and lab times.

Table 15: SENSE - Aspects of Highest Student Engagement Comparative Scores				
Benchmark	**Item**	**Response**	**Ranger College**	**2011 SENSE Cohort**
Engaged Learning	Frequency: Worked with classmates outside of class on class projects or assignments during the first three weeks of your first semester	At least once	59.4%	32.2%

Table 15: SENSE - Aspects of Highest Student Engagement Comparative Scores				
Engaged Learning	Frequency: Participated in a required study group outside of class during the first three weeks of your first semester	At least Once	37.0%	16.4%
Engaged Learning	Frequency: Participated in a student-initiated study group outside of class during the first three weeks of your first semester	At least Once	30.6%	16.6%
Engaged Learning	Frequency: Used an electronic tool to communicate with another student about coursework during the first three weeks of your first semester	At least Once	72.0%	54.9%
Engaged Learning	Frequency: Used Writing, math, or other skill lab	At least once	53.7%	36.1%

Student Retention

The Student Success by the Numbers (SSBTN) initiative tracks a cohort of students over a specific time period, usually from the time they first enroll in college-level classes to when they are no longer enrolled. The results are used to target those student groups that are prone to falling behind and pinpointing points along their academic path that prove the biggest barriers to their success.

The table below regards students who entered Ranger College in the fall of 2009 and notes their progress by 2012, by which time they should have successfully completed their coursework.

Table 16: 2009 Ranger College Students as Tracked by SSBTN		
Students re-enrolling for the spring 2010 semester	Students re-enrolling for the fall 2010 semester	Students who earned a certificate or associate degree by spring 2012
63%	21%	21%

These numbers must show an increase if the QEP is to succeed. Clearly, a 21% success rate is far below optimal and offers a clear benchmark against which the QEP's outcomes can be measured.

Ranger faces the challenges of delivering content not only to residential students, but also to commuter students and high-school students across multiple campuses. *The number-one key to making this system a success is personnel; the Ranger College faculty and staff represent our greatest asset. But our next most important consideration is technology.*

Our student population increased from 1000 in 2009 to as many as 1616 in the fall of 2010—a remarkable increase of 62%, and to 1937 students in the fall of 2012—another 20% increase. In only three years, our enrollment nearly doubled. Keeping up with such striking growth challenges faculty and strains our network infrastructure, especially when tough financial times prevent our technology budget from growing in response to a rapidly rising student enrollment. We are proud of our phenomenal growth over the last few years. But that growth requires a computer architecture equal to the task and a faculty with the training to introduce it into the classroom.

QEP Committee

Ranger College's status quo, coupled with ongoing research, continued to suggest that the QEP's focus be shifted to "e-learning" as a whole, with the integration of technology for increased student engagement as the main emphasis, followed by a need for professional development for the faculty and a course redesign. This would ensure that the shortcomings of individual programs could be addressed, along with other problem areas across our three campuses. Math courses would still play an important role in the QEP, as two of them would become focal points for the QEP course curriculum redesign and assessment of student learner outcomes. In December 2011, the exploratory committee submitted their findings to the college administration for review. When classes resumed in January 2012, the committee expanded to twenty members to better represent all stakeholders. The committee included not only faculty

members from multiple disciplines, but staff members, students, IT personnel, and representatives from the communities served by the college.

Table 17: QEP Committee Members	
Linda Gann, Chair	Professor of Business, Workforce Division Chair
Lance Hawvermale, QEP Writer	Assistant Professor of English, Webmaster
Dr. Norman Fletcher	Professor of Math, Math Division Chair
Emily Constancio	Instructor of Math
Van Evans	Assistant Professor of Computer Technology
Solomon Cross	Assistant Professor of Music, Choir Director
Billy Adams	VP for Student Learning, Professor of History
Dr. Elizabeth Price	Retention Coordinator
Kathleen Flournoy	Associate Professor of History
Laura Yeck	Director of Human Resources
Marnita Guinn	Dean of Nursing
KeSha Barkemeyer	Staff, Earth Campus Academic Advisor
Sarah Orsini	Staff, Student Support Services
Sandra Herod	Board of Regents Member
Tammy Adams	Chief Financial Officer
Jamie Beltran	Head Soccer Coach
Chuck Lemaster	Master Technician, Chair of Technology Committee
Mike Beran	Director of Information Technology
Stephanie Lowther	Student, President of Phi Theta Kappa Honor Society
Nonna Shlygina	Student, International Student (Russia), PTK Member
Jabari Wilmott	Student, Basketball Player, PTK Member

Based on the findings of the exploratory committee, the twenty members unanimously adopted "e-learning" as the cornerstone of Ranger College's QEP, and on January 23, the college Board of Regents formally voted to move forward with the process (Board).

Involvement of All Constituencies

Throughout the development process, Ranger College ensured that the committee enlisted the expertise, advice, and critique of everyone affected by the QEP at all three campuses. The development of an effective QEP could not take a "top-down" approach, but neither could it function as a "bottom-up" process. It had to be "center-out." That center was its twenty-member committee.

This committee consistently consulted those it served; rather than making all decisions by executive fiat, the committee members formed a consensus on important issues and then presented that consensus to the college community for discussion. Sometimes the initial decision was supported without reservation, and other times feedback indicated that the decision needed to be further customized to fit the greater need of the institution.

The table below demonstrates our commitment to this philosophy:

Table 18: Involvement of All Constituencies

	Students	Faculty	Board	Community	Admin./staff
Select the QEP topic	Students on all three campuses completed a survey to identify areas that pose the greatest problems/barriers to student learning.	Faculty from all campuses completed a survey to identify areas that posed the greatest problems/barriers to student learning.	Board reviewed the proposed QEP topic and voted to approve.	Workforce Advisory Council and IE team members identified areas in need of improvement for student learning.	Nearly all administrators identified areas in need of improvement for student learning at Administrative Council meetings.
Review data and Narrow the focus of the QEP	Students responded to technology and student satisfaction surveys. Students participated in slogan and logo contest.	Faculty responded to professional development surveys. Faculty members are represented on all QEP committees.	Special focus group of Board members met with assessment team to discuss focus of the QEP and viability. Board members participated in slogan and logo contest.	Community members gave input on the topic of technology. Lions Club and community members, participated in slogan and logo contest.	Assistance was provided in identifying data sources and obtaining access to needed data. Administration and staff participated in slogan and logo contest.
Establish the timeline for implementation	Students gave presentation to the Lion's Club on the QEP goals and QEP process.	The assessment team, which included faculty, created a timeline for the implementation of the QEP.	Board members reviewed implementation chart of the QEP and offered counsel.	Lion's Club, comprised of community members, received QEP newsletters and a presentation of QEP goals.	An accreditation timeline was created by the President along with members of the Administrative Council. The QEP Assessment Team created a timeline for QEP implementation.

	Students	Faculty	Board	Community	Admin./staff
Identify best practices	A focus group of developmental math and college algebra students recommended strategies to improve student learning and student engagement.	Faculty members on the QEP assessment team played a primary role in the identification of best practices. Conferences were attended, experts were consulted, and literature reviews were conducted throughout the planning process.			Administrators on the QEP assessment team played a primary role in the identification of best practices. Conferences were attended, experts were consulted, and literature reviews were conducted throughout the planning process. Administrators also provided a resource of contacts to assist with research efforts.
Identify human and financial resources		The assessment team, the Technology Committee, the Budget Committee, and marketing team identified resources that would be required for the QEP.	One Board of Regent served on the Budget Committee to help identify resources that would be available.		Two administrators, including the CFO, served on the Budget Committee to identify resources needed and resource availability.
Evaluate success	Students are updated on the progress of the QEP.	The assessment team is responsible for tracking the QEP and evaluating its success. Faculty in the math department collect data and report on the SLOs.	Reports of QEP progress are reported to the College Board of Regents on a routine basis.	The community continues to receive updates on the progress of the QEP.	An administrator serves on the assessment team, responsible for tracking the QEP and evaluating its success. QEP SLOs are integrated into the College's IE process and are monitored by the Dean of Administration.

III. Narrowing the Topic

With a broad QEP emphasis officially adopted—instructional technology and faculty development—the twenty-member committee met to discuss the committee itself; in what ways could it function most efficiently and meet the various objectives that would arise during the course of the QEP's development? The committee voted to divide itself into two complementary teams: planning/assessment and marketing. Each team of ten was charged with a different set of tasks. The teams further created subcommittees within themselves that could respond quickly to specific needs. The teams worked concurrently on a variety of objectives.

Planning and Assessment Team

The assessment team was comprised of a diverse group of faculty, administration, and staff members, including three representatives from the Mathematics Department and technology specialists.

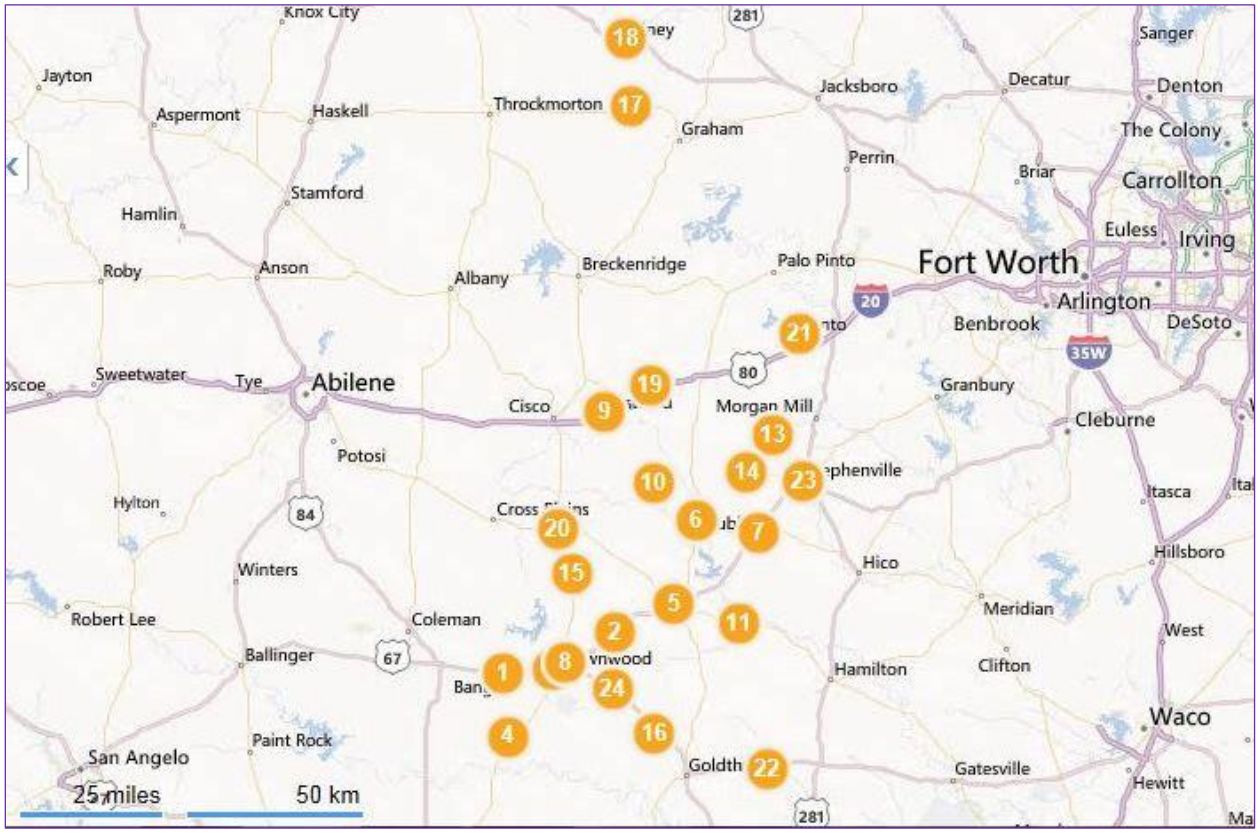
Table 19: Planning and Assessment Committee Members	
Linda Gann, QEP Director	Professor of Business, Workforce Division Chair
Lance Hawvermale, QEP Writer	Assistant Professor of English, Webmaster
Dr. Norman Fletcher	Professor of Math, Math Division Chair
Emily Constancio	Adjunct Instructor of Math
Kim Calton	Instructor of Math
Solomon Cross	Assistant Professor of Music, Choir Director
Billy Adams	VP for Student Learning, Professor of History
Jamie Beltran	Head Soccer Coach
Chuck Lemaster	Master Technician, Chair of Technology Committee
Mike Beran	Director of Information Technology

Dual-Credit and Technology

Ranger College's link to the public-school system has come full-circle. With the advent of distance-learning technology, Ranger began to offer courses to high schools in its service area.

Currently as many as 24 Independent School Districts (ISDs) enjoy a dynamic relationship with Ranger College. Their students receive concurrent credit in both high school and college classes. High school students comprise approximately one-third of our yearly enrollment.

Table 20: ISDs served by Ranger College		
1. Bangs ISD	9. Eastland ISD	17. Newcastle ISD
2. Blanket ISD	10. Gormon ISD	18. Olney ISD
3. Brownwood ISD	11. Gustine ISD	19. Ranger ISD
4. Brookesmith ISD	12. Houston Academy	20. Rising Star ISD
5. Comanche ISD	13. Huckabay ISD	21. Santo ISD
6. De Leon ISD	14. Lingleville ISD	22. Star ISD
7. Dublin ISD	15. May ISD	23. Stephenville ISD
8. Early ISD	16. Mullin ISD	24. Zephyr ISD



This map demonstrates Ranger's widespread area of responsibility. Ranger's relationship with the ISDs depicted here depends entirely on technology, as most dual-credit courses are broadcast via interactive video. As the needs of these students grow in different directions, and

as continued innovations offer new content-delivery methods, it is imperative that Ranger College stays current in the areas of hardware, software, and bandwidth, but also in the training of our faculty and staff. What began in 1925 as a partnership with public schools can flourish in 2013 and beyond if Ranger remains close to the forefront of distant-learning initiatives and provides our faculty members with the most up-to-date training possible.

Our interactive television (ITV) courses currently reach two dozen different schools located across seven counties. Dual-credit classes provide an invaluable service to students who otherwise might not be able to afford the cost of college tuition. The college's online courses can reach students anywhere in the world. *In fact, over 55% of all Ranger College students receive at least some of their coursework through ITV or online media* (Slaughter). The demands on the college's delivery equipment and software—much of it outdated—only grows each semester, as we partner with more institutions and give their students an opportunity to earn college credit through Ranger College.

Distance-delivery hardware permits Ranger College to establish what is known as a "telepresence," or the ability to conduct traditional classroom activities on multiple locations. Ranger depends more heavily on telepresence than many institutions. Telepresence is vital to our continued existence as a college, given the fact that a third of our students are based in high schools. The professors on our various campuses are able to establish a telepresence that makes interactivity with off-campus students a very real thing. It's more than just cameras and TV monitors. The old method of the "talking head" on a screen has been replaced with multiple-point discussions, shared Web activities and videos, and "smart" whiteboards. It is imperative that all faculty members become versed in the use of our increasingly important distance-delivery methods.

Barriers to Student Success

The perennial challenge facing all colleges and universities is the drive for steadily increasing student enrollment. In recent years, Ranger College has been very successful in attracting a variety of students, due in large part to our offerings available in Erath and Brown Counties, as well as to our distance-learning courses. But our recruitment efforts can be hampered by an inability to offer students the access to technology that they can find at other schools. Many if not most high-school students are familiar with Promethean and SmartBoards in the classroom; when they arrive at Ranger and realize that there are no such teaching tools, their faith in their ability to succeed here is often diminished. If our goal is to recruit and retain, we need to present ourselves in the best possible light. Many of our classrooms have not even upgraded from chalkboards to whiteboards, much less to "smart" technology. When a high-school senior visits our campus, they expect to see projectors, laptops, and advanced content-delivery equipment. Chalkboards have an understandable effect on morale.

Technology in the classroom attracts potential students, promotes learning, improves retention rates, and leads to more graduates walking across the stage on commencement day.

Though ongoing faculty training is necessary to stay abreast of the latest innovations, the lack of dependable, up-to-date hardware and software decreases an instructor's ability to deliver meaningful content to students. The typical college student has grown up in a world where access to technology is taken for granted. Manipulating touchscreens and inferring meaning from icons has become second nature. Students today absorb information in ways completely foreign to those of the prior generation. And it goes deeper still. Social networks now carry as much relevance in the lives of these students as their relationships with friends "in real life"—or IRL, as Internet parlance goes. So many hours of their days are spent *not* IRL that instructors

must find new ways to engage them, ways that speak to their preferred method of interaction. Those "old school" instructors who refuse to employ advanced technology have many valid points to defend their stance, but philosophical arguments aside, today's students are children of constant connectivity. **Engage With E-Learning** meets students where they already are.

A lack of a robust computer network is thus one of the primary barriers to student success. When a simple rain shower collapses online access across the Ranger College main campus—an event that happened in the past with alarming regularity—students were not simply inconvenienced but displaced. Outside of the classroom, they spend their spare time on their smartphones, their laptops, and their tablet PCs. Though older generations might gently mock such terms as "IRL" and a young person's dependency on text messaging, the simple truth of the matter is that the world is changing and continues to change. A stable digital network that can withstand rain as well as busy registration times is not merely a luxury but a necessity.

In the spring of 2012, Ranger College students responded to a technology survey that covered topics from smartphone use to their experience with the campus Internet connectivity. Over half of the students reported facing reliability issues when trying to access the Internet on a day-to-day basis.

Table 21: Student Technology Satisfaction (Ranger Campus)	
High Reliability	11%
Good Reliability	12%
Poor Reliability	52%
Varies Daily	25%

Another question asked, "Do you feel that the campus provides computer access at sufficient levels and locations?" A disheartening 69% of the students replied "No." Clearly the students indicated that computer access and Internet reliability were hindering them rather than helping them during their time at Ranger College. Even more telling, nearly all of the "write-in"

comments reflected negatively on the institution's ability to meet its students' technological needs (see Survey 2 in the Appendix).

The committee generated several surveys to use in combination with the data compiled by external polling firms like CCSSE and SENSE. During the course of the QEP's development phase, student and faculty "satisfaction" surveys were instrumental in sharpening the committee's focus. One such survey posed this question to campus members: "From my experience, Internet access at Ranger College is . . ." The answers received were revealing:

Table 22: Faculty and Staff Internet Experience	
Consistent and Fast	35%
Consistent but Slow	12%
Inconsistent but Fast	6%
Inconsistent and Slow	32%
Never Seems to Work	15%

Only 35% of all Ranger College faculty and staff reported a consistently positive experience with Internet connectivity. This is an alarming percentage, given the college's dependence upon the delivery of distance-learning courses. The surveys that followed were designed to refine these questions and pinpoint specific areas of concern. The committee's close communication with our constituencies continued to prove that a technology-based QEP was the most appropriate one for Ranger College.

During initial QEP discussions and debates, many suggestions that were made to meet a particular shortcoming, such as poor graduation rates, turned out to be a suggestion dependent upon equipment that Ranger did not currently possess or on technological skills that the majority of our faculty members had not yet acquired. Though the committee discussed a variety of potential QEP topics, ultimately those subjects proved untenable, given the college's outdated

technology and its faculty's lack of training in these teaching methods. Our initial survey's highest-ranking barrier, "lack of technology," proved to be an accurate assessment.

The broad area of "technology" also aligned with the college's institutional planning initiatives of recent years. In both 2009 and 2010, the college's published executive priorities included the intentions to "increase technological capability" and to "update and expand technology and ITV capability," respectively.

During these stages of the QEP's development, the committee members asked themselves a few basic questions. Are we functioning as efficiently as possible? Is our goal still consistent with the overall mission of Ranger College? To answer these questions, committee representatives met in September 2012 with members of the college's Board of Regents. Members of the board analyzed the QEP efforts up to that point and reaffirmed their belief that **Engage With E-Learning** was working toward the best interests of the Ranger College students. As a result of this meeting, the members authorized the purchase of dozens of new computers across the three campuses as part of our Phase Zero foundational efforts, demonstrating their support both verbally and financially (Board Minutes).

Focus Analysis

Representatives from our Brown County and Erath County locations discussed the requirements of students at their facilities, where the student composition is very different from the athletics-heavy student body at the Ranger home campus. After a weekly series of meetings, emails, and teleconferences, the assessment team asked the greater QEP committee to approve the following mission statement, adopted on January 27, 2012.

The focus of the Quality Enhancement Plan is to increase student success and student learning by engaging students through the use of technology.

The Ranger College mission statement represents a broad-based, far-reaching plan to steadily improve technological services across the board, with the primary goal of increasing student success in the classroom. "Student success" requires getting the students more involved in daily classroom activities (engagement) and improving their attendance and completion rates (retention). A large component of the mission involves widespread training of faculty; professional development plays a crucial role in **Engage With E-Learning**. Ranger College strongly believes that nearly *all* programs will be affected positively by bringing our current hardware and software up to current standards and by introducing instructional technology teaching aids to our classrooms. We seek to become known as a media-driven institution, using a variety of tools to increase student learning and measures of student success, including student retention and graduation rates. The mission statement encompasses the needs of all members of the college community and addresses the shortcomings evidenced in the research data. Practicality played a large role in the determination of the mission statement; it implies that changes to our existing teaching methods and technology can make an immediate impact, while at the same time assuring long-term growth and enabling the college to meet the needs of students in the future, regardless of how technology may change. As an institution, we are assertive in our use of evolving technology, and the mission statement reflects this.

Targeting Math

The QEP will demonstrate its impact by examining two courses—DMAT 0313 (Beginning Algebra and Geometry) and MATH 1314 (College Algebra). All of our initial research showed that these courses consistently demonstrated the highest DFWIQ rates (see Tables 6 and 7). Changes must be made to address these concerns. The new practices and procedures outlined by **Engage With E-Learning** will be introduced into certain sections of

these courses, and the results will be consistently monitored throughout the QEP's deployment. Further, DMAT 0313 is a logical choice, given the state of Texas's current restructuring of all developmental-level programs. To keep the QEP tightly focused, all assessment efforts will be concentrated on these two math courses.

Marketing Team

The marketing team was chaired by the director of Human Resources, with the roles of co-chairs filled by the director of Developmental Studies, the dean of Nursing at Brown County, and the academic advisor at Erath County, ensuring that our three campus received equal representations.

Table 23: Marketing Committee Members	
Linda Gann, QEP Director	Professor of Business, Workforce Division Chair
Laura Yeck, Chair	Director of Human Resources
Dr. Elizabeth Price, Co-Chair	Retention Coordinator
Marnita Guinn, Co-Chair	Dean of Nursing
KeSha Barkemeyer, Co-Chair	Staff, Earth Campus Academic Advisor
Kathleen Flournoy	Associate Professor of History
Sarah Orsini	Staff, Student Support Services
Sandra Herod	Board of Regents Member
Tammy Adams	Chief Financial Officer
Stephanie Lowther	Student, President of Phi Theta Kappa Honor Society
Nonna Shlygina	Student, International Student (Russia), PTK Member
Jabari Wilmott	Student, Basketball Player, PTK Member

Though Ranger College did not yet have a QEP to "market" to the community, the marketing team identified several areas of need:

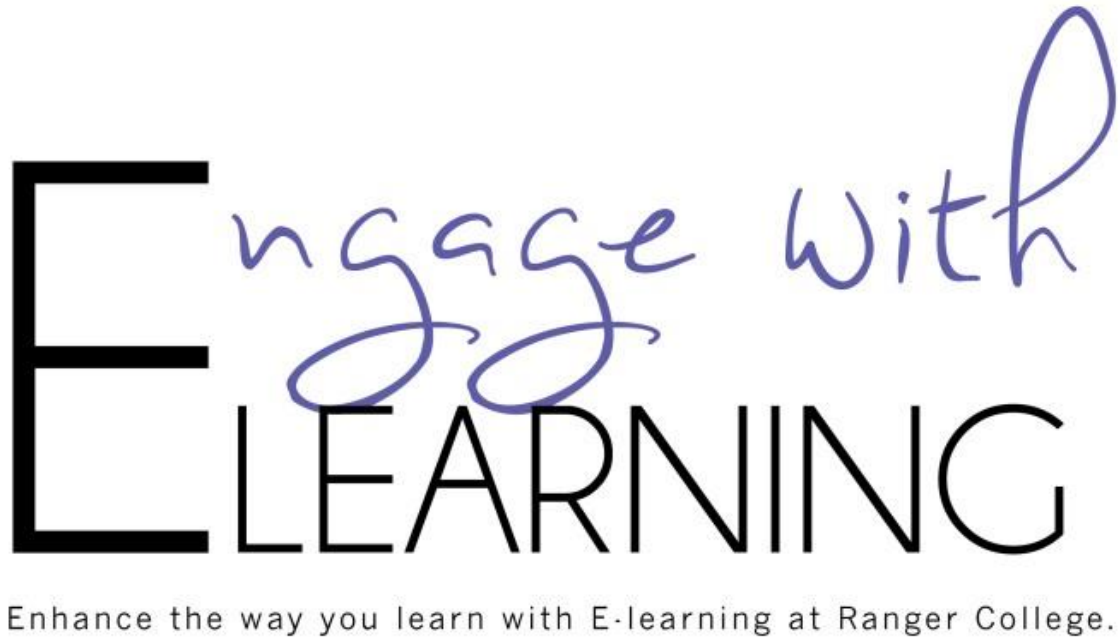
- Broaden the community's awareness of the need for a Quality Enhancement Plan.
- Receive feedback from all constituencies and pass data to the assessment team.
- Inform the community of the QEP's ongoing progress.

The marketing team became the QEP's public face. Its members reached out to the campuses of Ranger, Erath County, and Brown County, ensuring continuous input from faculty,

students, staff, and community members. In the fall of 2012, the marketing team began publishing a periodic QEP newsletter to provide the public with frequent updates and to encourage ongoing participation.

Slogan/Logo

The marketing team held slogan and logo contests to involve everyone in the QEP process. Winning categories for students, faculty, administrative/staff/Board, and community members were created and prizes were awarded. Dual credit students were also involved and eventually our QEP gained its final visual representation:



Engage With E-Learning embodies Ranger College's desire to equip its faculty members with the most current teaching techniques and assist them in the implementation of new technologies as content-delivery tools. Students, for their part, "engage" with these initiatives through a variety of interactive media. The end result is increased student learning.

IV. Literature Review and Best Practices

The initial data compiled and the topic finalized, the assessment team of the QEP committee studied "best practices" and implementation strategies from a variety of contemporary sources. **Engage With E-Learning** makes faculty members proficient at using technology in the classroom to improve student learning, and it focuses on two specific math courses as case studies. With this in mind, research focused on literature that addressed not only advances in multimedia but also on sources that examined student engagement and technology integration in math courses.

Research into best practices cannot be a one-time event, conducted only at the beginning of the QEP process and then set aside. Evolution is a fundamental part of best practices, as data from new initiatives reveal fresh ideas and modify outdated strategies. It is important that colleges "assess the resources and skills needed for effective institutional research, recognizing that research is an investment. As with even the most rewarding investment, its payoff emerges only over time" because assessments of the effectiveness of these programs "are difficult and involve a continuum of activities and analyses" (Bailey and Alfonso). At an even more basic level, no academic reform of any kind is possible without an "institutional commitment" from every place affected by the college's many programs, an agreed-upon strategy that is "coordinated and comprehensive" (Roueche and Roueche).

In addition to student support and absence tracking, Ranger College explored the best practices of professional development for faculty, advances in absence tracking and student engagement, and technological engagement activities in mathematics courses.

Professional Development

Technology by itself accomplishes nothing. No amount of hardware or curriculum-enhancement software is a panacea. Integrating new technologies into the classroom with the goal of increasing student success cannot be accomplished without highly trained faculty members. In fact, the "lack of professional development for technology use is one of the most serious obstacles to fully integrating technology into the curriculum" (Fatemi). Professional educators understand the need for staying current, "but they lack the time, access, and support necessary to do so" (Guhlin).

Research reveals that an increasingly popular means of bringing professional development to a faculty is through the "cascade model," in which "one or two 'champion' teachers at a school might attend centralized workshops to build computers skills or learn about integrating computers into teaching and learning. When they return to their schools, these champion teachers provide [professional development] to their colleagues" (Gaible and Burns). Before the beginning of each semester, all faculty members participate in special "in-service" meetings. At these meetings, specialists and "champion" instructors provide their colleagues "with hands-on opportunities to build technical skills and work in teams while engaging them in activities that have substantial bearing on their classroom practices or on other aspects of the school workplace (Gaible and Burns).

Absence Tracking and Early Alert

A typical early alert program is a type of "intervention," giving faculty members, coaches, and academic advisors the chance to contact students midway through the semester, while there is still time for the student to positively change the direction of his or her grades. A 1992 study by Irvine Valley College determined that alerting students to their grades and their

absences during the semester resulted in a much greater student-success rate at the end of the year; retention among those students was as high as 81.3% (Rudmann). However, early alert systems have not demonstrated such a level of effectiveness that they can be considered the "magic bullet" of student success across all campuses and student populations.

At Columbia College in California, an extensive early alert initiative involving nearly 40 courses across 16 different subject areas generated only luke-warm results; most of the alerted students did not take the next step and use the academic support services that were offered to them. A study of Columbia's efforts concluded that, "The program is an effective first step, but appears to fall short of its intended goal of motivating students to seek support services" (Pfleging). Success, then, sometimes requires more than simply warning students of their low standing in the gradebook.

In a perfect world, there would be no need for an office dedicated to student success. But the transition into the college environment and its attendant pressures and diversions can complicate the academic course of even the most dedicated student. Add to this a number of external factors such as jobs, families, and financial concerns, and students face an increasing number of obstacles on the path to graduation. Research shows that "student success" programs help students overcome those obstacles, but at the same time, no one approach will result in a positive outcome for every student. A holistic approach works best (Schwartz and Jenkins). Further, studies reveal that student support services are most effective when they excel in six areas: (1) a "freshman year" experience course, (2) an emphasis on developmental courses, (3) extensive contact with students, (4) participation incentives for students, (5) dedicated staff members, and (6) maintain "an important role on campus" (Muraskin).

Student Engagement

Though educators at all levels understand the importance of having "engaged" students in the classroom seats, the definition of the term is elusive. Further, the ability to engage students can be challenging, given the distractions of modern life and the countless stimuli competing for a student's attention at any given moment. Students are engaged "when they devote substantial time and effort to a task, when they care about the quality of their work, and when they commit themselves because the work seems to have significance beyond its personal instrumental value" (Newmann 242). At the most basic level, engaged students show up and pay attention in class. They do so not only to obtain the information necessary to pass the next exam, but because they enjoy the material or at least see some value in it beyond its immediate impact on their GPA. Despite sometimes being difficult to achieve, "student engagement is recognized by teachers and researchers alike as an important link to student achievement and other learning outcomes" (McGarity and Butts 55).

Today's classroom depends on multimedia to meet students at a place where they are most eager to learn. Though the term "multimedia" has become so generic that it can mean almost anything, but for the purposes of this review, **Engage With E-Learning** defines a multimedia classroom experience as one that involves a combination of student-instructor interactivity through both hardware and software. Which classroom sounds more interesting, one in which quiz notes are written on a chalkboard for the students to record, or one in which the students use their mobile devices to respond to quiz questions presented as an online poll on a digital whiteboard? Active content-delivery methods, "especially those that use recently available Web and technology-based tools and resources, can be more effective than traditional methods" at keeping students engaged (Barr and Tagg 12).

Many different technologies are used by colleges today. Texas's San Jacinto College creates and shares lessons with students by using the ShowMe app or Livescribe pen, both of which record notes to step-by-step problem solutions and can also include audio components. Austin Community College uses a software product called Camtasia that can be used to make videos using the computer screen and the instructor's voice. These videos are especially helpful in uploading to Blackboard for students that need to see the material again or for those who missed the class lecture. Adobe Acrobat allows the faculty to grade work and submit it back to the student electronically. Students can submit picture files of their homework, which can easily be converted to a PDF for grading. Powerful tools such as these can be used in any hybrid or online classroom.

Engagement depends upon another term requiring a definition: rigor. In one sense, academic rigor means using challenging material in class, material that "examines details, insists on diligent and scrupulous study and performance, and doesn't settle for a mild or informal contact with the key ideas" (Talbert). But in his book *The Global Achievement Gap,* educator Tony Wagner provides a deeper meaning for the term, one that fits well with the deployment of technology in the classroom. Rigor is defined by its fostering of particular skills (Wagner):

- Critical thinking and problem solving
- Collaboration across networks and leading by influence
- Agility and adaptability
- Initiative and entrepreneurialism
- Effective oral and written communication
- Ability to access and analyze information
- Curiosity and imagination

Technology-driven content remains the key to the success of this process. Research shows that "activity necessarily improves engagement, since the active student is an engaged

student," but "a critical first step in . . . getting students active is their having some content to be active with" (Taylor).

As for assessing levels of student engagement, many colleges use surveys and customized instruments to ask their students to address personalized areas of concern. This is known as *self-reporting*. A review of current best practices indicates that "in addition to asking the question of *whether* students are engaged in learning tasks, self-report measures can provide some indication of *why* this is the case" (Chapman). This "why" is very important if any QEP is to be self-correcting as programs are assessed and adjusted to meet student needs.

Technologies in Math

The American Mathematical Association of Two-Year Colleges (AMATYC) endorses the use of technology as an essential component of the curriculum and considers it a standard for college-level math preparation (Blair). Advances in hardware and increasingly effective software packages "are designed to identify skill deficiencies and use artificial intelligence systems to help students master increasingly challenging material through continuous assessment" (Epper and Baker). But technology is becoming more than a simple aid in the classroom; in some cases it is redefining the classroom itself, as emerging practices are "challenging the assumption that technology is best used only as a 'supplement' to more traditional approaches" (Epper and Baker).

A more individualized curriculum is a promising alternative to traditional math course-delivery. The National Center for Academic Transformation found that tailored course content "has consistently produced spectacular gains in student learning and impressive reductions in instructional costs" (NCAT). This model of mathematics instruction teaches students only the math they need, rather than blanket them with generic curriculum. Students work at their own

pace online, with professors available as needed. "Instead of a student sitting in a class for seven weeks waiting for what they need to know, they walk right into that material" (deVise).

In 2009, Jackson State Community College in Tennessee reported a failure rate in developmental math courses of nearly 45%. As in many developmental math programs, students at JSCC were "required to study topics that [were] not relevant to their majors, to take an entire course even though they [were] deficient in only some topics and to learn at the same pace and experience the same instructional strategies as the entire class" (Tennessee). These traditional course arrangements were clearly not serving the student population. A shift to an individualized curriculum requires a departure from these traditional teaching methods, as it "supports student-centered instruction. The teacher assumes the role of coach or facilitator while students work collaboratively" (Jones et al). JSCC shifted away from a traditional lecture-based classroom:

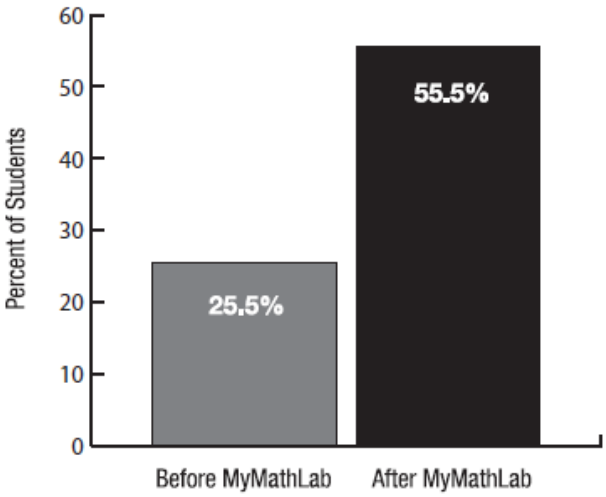
> "Each student will receive an individualized learning contract based on academic background, learning preferences, identified gaps and educational goals which will provide a path to achieving the desired learning outcomes. Students will be required to master only the concept deficiencies determined by a pre-test and those that are relevant to their career goals. A learning center will house course content modules, video lectures, online homework and testing from MyMathLab and will provide a place for students to receive immediate assistance from instructors and tutors . . . [the program] will offer remediation for students who fall behind in scheduled work and acceleration for students who are capable of moving through objectives more quickly." (Tennessee)

JSCC saw an increase in student success in developmental math by a remarkable 44%.

A strong student-centered, personalized approach provides a positive framework for a curriculum redesign, having consistently produced strong results in a variety of academic settings across the nation. Our review of the literature and best practices confirms that "a consistent set of elements that commonly characterize effective developmental education programs. A total of 26 effective practices emerged under four major categories: (1) organizational and administrative practices; (2) program components; (3) staff development; and (4) instructional practices" (Boroch).

A major component of many colleges taking this approach is the MyMathLab curriculum-delivery tool. MyMathLab is an online teaching instrument that uses interactive multimedia to present course content and guide students through the curriculum at their own pace, catered to their specific needs. It represents a dramatic paradigm shift from the classic "lecture from the blackboard" method of teaching and the "one size fits all" delivery method. Rock Valley College in Rockford, Illinois succeeded in greatly increasing their student-success rate with the introduction of MyMathLab. RVC saw "a more than 50 percent increase in the percentage of students receiving As, Bs, or Cs and a more than 50 percent decrease in the overall course withdrawal/fail rate" (Raising).

As shown on the graph on the following page, El Centro College, part of the Dallas Community College District, more than doubled its students pass rates with MyMathLab after including it in a restructuring of their basic mathematics classes. The graph depicts the average college-level mathematics pass rates before and after MyMathLab adoption by El Centro College (MyMathLab).



A personalized, student-first approach to mathematics instruction represents a bold departure from our traditional methods—methods that were not providing the results we desired. Together with vigorous absence tracking and a new commitment to faculty technology training through a cascade model, **Engage With E-Learning** directs the college onto a path proven to be successful.

V. Objectives, Measures, and Outcomes

Table 24 depicts each of the QEP's three objectives as stated in Section I, Overview: (1) improve campus technology infrastructure, (2) improve faculty expertise in the use of instructional technology, (3) enhance instructional course design for increased student engagement. The table notes specific outcomes for each objective, as well as their relationship to assessment, budget, responsible parties, and other elements.

Table 24: Objectives, Measures, and Outcomes

(Table 24-1) Objective 1: Improve campus technology infrastructure.							
	Type of Assessment						
Strategies	**Form/ Sum**	**Direct/ Indirect**	**Outcome**	**Assessment**	**Time Line**	**Persons Responsible**	**Budget Implications**
1a Increase Internet Access	F	I	Improved bandwidth on Ranger campus to 40 mgs with wireless access to all buildings	Purchase and implementation of additional bandwidth and building connection access points (Internal)	Summer 2012-Spring 2016	IT department	ITV line $2500/yr Building Connections $55,120
	F	I	Increase student satisfaction	Student Satisfaction Survey (Internal)		QEP Director	40 mg Bandwidth $66,000/yr
1b Increase Technology Hardware	F	I	Blackboard Server New ITV Equipment New computerized math, reading, English labs; faculty computers; library computers Smart Boards	Purchase Blackboard Server, Tandberg systems, computers, Smart Boards (Internal)	Summer 2012-Fall 2016	IT Department QEP Director VP of Instruction	Blackboard Server $181,885 ITV Equipment $361,616 Computers $78,750 Smart Boards $192,000
	F	I	Increase student satisfaction	Student satisfaction survey (Internal)		QEP Director	

(Table 24-1) Objective 1: Improve campus technology infrastructure.							
1c Increase Technology Software	F F	I I	Microsoft Licenses Blackboard Integration Software IncludED software Absence/Early Alert Software Increase student satisfaction	Purchase of software (Internal) Student satisfaction survey (Internal)	Fall 2012-Fall 2016	IT Department QEP Director VP of Instruction QEP Director	Microsoft $6,720 Blackboard $7,000 IncludED $4,000 Absence/Early Alert $7,000
1d Hire IT Director ½ time **Hire Retention Coordinator 1/2 time**	F F	I I	Increased student technology support Increased student support	Personnel hired (Internal) Student satisfaction survey (Internal)	Fall 2012 Fall 2013	Human Resources QEP Director	QEP/$20,000 ½ time QEP/ 21,000 ½ time

Objective 1 Details

1a. Increase Internet Access: The Ranger College main campus shared 3 MB of broadband, which prohibited testing and slowed internet use for everyone; oftentimes it became bottlenecked to the point of inoperability. Under the QEP, a 20-MB fiber-optic line was installed, and another 20-MB line will be purchased and installed in Phase 1.

1b. Increase Technology Hardware: Prior to the QEP, Ranger College was using the free Blackboard CourseSites for its learning management system (LMS), which allowed only a limited number of courses. By purchasing the full Blackboard LMS and hosting our classes on a Blackboard server, course curriculum access is available for all students. The existing Tandberg ITV units failed to delivery reliable audio and video service; new units were purchased for increased reliability and to enhance student satisfaction. The main campus library improved from seven computer stations to thirty, with consistent operating systems and up-to-

date software. The reading and math labs replaced 80 computers so that students could complete assignments in a timely manner. SmartBoards will be purchased over the duration of the QEP to allow different methods of interaction with the students. All full-time faculty and many adjunct faculty members received or will receive laptop computers to be used with the SmartBoards. Faculty will also use the laptops to report absences at the beginning of each semester, for more efficient course management.

1c. Increase Technology Software: Blackboard integration software will be purchased to communicate with the POISE student management system to populate the Blackboard courses with student rosters. At present this is being done manually for each online course.

Thirty-three percent of students at Ranger College don't purchase books and many of those that do purchase books, do not do so until later in the semester. IncludED software will permit classroom materials such as books and MyMathLab access codes to be charged at the same time as tuition, giving students access to these required articles on the first day of class.

Ranger College faculty believe that students who attend class have a much better chance of passing than those who do not. Absence/early alert software will allow instructors to record absences in "real-time," so at-risk students can be identified by the Retention Coordinator.

1d. Hire IT Director and Retention Coordinator: An IT Director was hired in the fall of 2012 to manage all campuses and to help students with tech-based needs. A Retention Coordinator will be hired in the fall of 2013 to counsel at-risk students and encourage them to attend class and help them seek additional student support services.

Assessment of the infrastructure will have two components. The first measurement will be if the equipment, hardware, or software was actually acquired (the number of units

purchased, bandwidth, et cetera) and if it was implemented. The IT Department will be responsible for assessing this measurement.

The second measurement will be the administration of a Technology Satisfaction Student Survey by the QEP Director to assess the level of satisfaction with the Ranger College technology infrastructure, including satisfaction with the IT Director and the Retention Coordinator. The target measurement will show improved student comments on the infrastructure.

The overall outcome of these improvements will create a better technological student learning environment.

(Table 24-2) Objective 2: Improve faculty expertise in use of instructional technology.							
	Type of Assessment						
Strategies	**Form/ Sum**	**Direct/ Indirect**	**Outcome**	**Assessment**	**Time Line**	**Persons Responsible**	**Budget Implications**
2a Professional Development training for Blackboard software	F	I	100% of faculty will receive Blackboard training	Number of faculty who attended training. (Internal)	Faculty Professional Development Sessions Spring 2014-Fall-2016	Blackboard Corporation Blackboard E-Specialist	$7400/once $1,500/sem Stipend
2b Professional Development training for Smart Boards, ITV equipment, and integration of technology methods	F	I	100% of ITV instructors and 100% of faculty who have access to Smart Boards will receive training	Number of faculty who attended training. (Internal)	Faculty Professional Development Sessions Spring 2014-Fall-2016	Region 14 Service Center Faculty Specialist	$2500/yr 5 days/yr $100-300
2c Professional Development training for MyMathLab	F	I	100% of math faculty will receive MyMathLab training	Number of math faculty who attended training. (Internal)	Faculty Professional Development Sessions Spring 2014-Fall-2016	Pearson Publishing Faculty Specialist	$1,000 $3,000

Objective 2 Details

One of the primary goals of Engage With E-Learning is to increase the faculty's knowledge and implementation of technology teaching aids. Surveys asked faculty members to answer this question: "What percentage of your classroom time is spent on technological engagement activities with your students (interactive discussions, computer activities, website explorations, slideshows, Poll Everywhere, etc.)?"

Table 25: Faculty Technology Use in the Classroom

	None	25%	50%	75%	All
Ranger Campus	16%	40%	20%	12%	12%
Erath Co. Campus	29%	21%	29%	21%	0%
Brown Co. Campus	17%	36%	30%	17%	0%

These surveys indicated that most faculty members, both full-time and adjunct, depend most heavily on traditional lectures rather than on digital engagement tools due to the lack of technology access. With the acquisition of new hardware and software, professional development is needed to improve faculty expertise in using technology as a teaching aid. Nearly all faculty required training in at least one if not all new modes of curriculum delivery. The full results of this survey are found on Survey 6 in the Appendix.

2a. Professional Development in Blackboard: Blackboard advanced training will be provided by Blackboard Corporation to all online instructors and the E-Learning Specialist, providing professional development on utilizing the advanced features available in the Blackboard LMS. Conventional classroom instructors, both full-time and adjunct, will receive professional development training in Blackboard Basic from the E-Learning Specialist.

2b. Professional Development in Hardware and Software: The QEP will provide training in both hardware and multimedia software. Hardware training will be provided for the new Tandberg units, SmartBoards, and document cameras. Multimedia software training will

include absence/early alert system, and general multimedia applications (Digital Downloads, apps, YouTube, Poll Everywhere, et cetera).

2c. Professional Development in MyMathLab: The math faculty currently use basic components of the MyMathLab software but have never received training in all of its features Ranger College has three full-time faculty and three adjunct faculty members who will receive professional development in the advanced features and usages of the MyMathLab software.

Assessment will be based on percentage of faculty (full-time and adjunct, with the exception of dual-credit instructors) attending and completing training. A target of 100% has been set in Blackboard, MyMathLab, and hardware and software knowledge.

(Table 24-3) Objective 3: Enhance instructional course design for increased student engagement.							
	Type of Assessment						
Strategies	**Form/ Sum**	**Direct/ Indirect**	**Outcome**	**Assessment**	**Time Line**	**Persons Responsible**	**Budget Implications**
3a Electronic Course Access-- Blackboard Curriculum Alignment	F	I	100% of courses offered will be student accessible on Blackboard LMS in standardized format	Percent of courses using Blackboard LMS in standardized format (Internal)	Spring 2014-Fall 2016	Blackboard E-Specialist	Blackboard LMS $35,000-38,000 per year Poise Blackboard Integrate $7,000
3b Implement Student Attendance Reporting/ Early Alert System	F	I	4 weeks: DMAT 0313- 85% will miss less than 4 times MATH 1314- 95% will miss less than 4 times End of semester: DMAT 0313 & MATH 1314-- 50% will miss less than 4 times	Ranger College Attendance/Early Alert Report (Internal)	Implement Fall 2014 Record each semester	Faculty/Adjunct Faculty; Retention Coordinator; Administration	Poise Absence/Early Alert $7,000

(Table 24-3) Objective 3: Enhance instructional course design for increased student engagement.							
3c Curriculum Re-design; technology integration in targeted courses	S	I	Increased student success rates by 10% in targeted courses	Student Success Rate (Internal)	Each semester	Registrar	IncludED $4,000 $8,000 Graphing Calculators
	S	D	Increase in Retention Progression to 25% in targeted courses	Retention Progression Rate (Internal)	Annual Cohort	Registrar	$78,750 computers 2 Math Faculty/$1,500/sem 1st yr $1,500/ year after
	S	D	Post SLO Outcomes will show a 25% increase from Pre SLO Outcomes	Diagnostic Accuplacer for Developmental (External) Common Exam for MATH 1314 (Internal)	First and Last week each semester	Math Department Faculty	
	S	I	Student Engagement (Active and Collaborative Section) will increase to 65% in DMAT 0313 and 60% in MATH 1314	Student Self-Rated Technology Engagement Instrument (Internal)	Each Semester	QEP Director Students	

Objective 3 Details

3a. Blackboard Curriculum Alignment: Currently the only students with access to Blackboard are those who are taking online classes. This QEP objective will require that all courses (conventional, online, ITV, and dual credit) provide their course content through the Blackboard interface in a standardized format. After the Blackboard courses are created online, the Math Department will create online tutorials that will show step-by-step examples of how specific math problems are calculated. Many if not all tutorials will also include an accompanying audio explanation. Students can access this support system electronically from anywhere at any time.

The Blackboard E-Learning Specialist will be responsible for assessing the campus-wide implementation of the Blackboard Learning System. Our assessment number in this area is very simple: by the end of the QEP's lifecycle, we expect no less than 100% of instructors to be using Blackboard in a standardized format to provide at least a portion of their course content. Presently 43% report using Blackboard to some degree; we will add about 25% more courses per year. The full results of this survey are found on Survey 7 in the Appendix.

3b. Student Absence/Early Alert System: The increasing number of class absences has become a primary concern. By adopting an absence-reporting and early alert system, we will be able to identify at-risk students and report them to the Retention Coordinator and other concerned parties. Absences were assessed at the four-week point in the semester, obtaining a baseline rate of four or more absences. Absences were also assessed at the end of each semester, obtaining a baseline rate of four or more absences:

Table 26: Absences (4 or more)

	Spring 2013	Target
DMAT 0313	Four weeks: 20%	85% with less than 4 absences
	End of semester: 66%	50% with less than 4 absences
MATH 1314	Four weeks: 5%	95% with less than 4 absences
	End of semester: 65%	50% with less than 4 absences

The addition of the mandatory attendance-reporting system and the hiring of a Retention Coordinator will decrease student absences in targeted courses at both the four-week time period and the end of the semester. The Absence Report, which will be created by the Retention Coordinator, will be used for assessment.

3c. Curriculum Re-design and Technology Integration: One developmental course, DMAT 0313 (Beginning Algebra and Geometry) and one gateway course, MATH 1314 (College Algebra) were chosen for the application and assessment of the QEP. While technology

integration is encouraged for all courses, these two courses are the main concentration for this QEP cycle. Only conventional and ITV classes on all campuses will implement the curriculum re-design and technology integration. The following integration of technology will be included in the curriculum re-design of DMAT 0313 and MATH 1314:

1. Provide student access to required course materials on the first day of class: Graphing calculators will be purchased for classroom usage and MyMathLab codes will be charged with tuition by implementing the IncludED software program. Many students don't have the funds to purchase these for first-day access.

2. Use computerized diagnostic testing to identify a student's area of need. Create a computerized course of study for labs and outside-of-classroom assignments using the advanced features of MyMathLab.

3. Integrate technological applications and methods of instruction into the classroom. The usage of SmartBoards allows technological application such as the ShowMe App, Winplot, Poll Everywhere, Quizlet, etc. to be integrated into the classroom for increased student-engagement activities.

4. Create Blackboard courses to provide electronic access to course content with online tutorial support system, supplemental instruction, and support for students. The absence/early alert program will identify at-risk students to the Retention Coordinator who will then direct students to the online tutorial support system and/or Student Support Services.

The QEP technology integration curriculum re-design will have the following outcomes:

Student Success: The definition of student success at Ranger College is any student earning at least a C in the course. As measured by the college registrar, current student success percentages and our new target percentages are shown on the table below:

Table 27: Student Success Rate

	Fall 2011	**Target***
DMAT 0313	55%	65%
MATH 1314	58%	68%
*10% increase per course		

Overall student success will improve by 10%, facilitated by a 2.5% per year improvement in retention.

Retention

The following table demonstrates the completion/retention and progression rates of students in the targeted math courses: DMAT 0313 and Math 1314.

Table 28: Fall 2012 Cohort Retention in DMAT 0313 and MATH 1314				
Cohort enrolled in DMAT 0313 in Fall 2012	Successful Completion of DMAT 0313 (B or better)	Persisted to next course level	Completers Enrolled in DMAT 0323 in Spring 2013 (B or better)	Successful Completion of DMAT 0323 Course
52	14	11	3	1
27%		79%	33%	
Completers Enrolled in Math 1314 in Spring 2013	Successful Completion of Math 1314 (C or better)	Persisted to next course level	Enrolled in Math 1314 in Fall 2014	Successful Completion of Math 1314 in Fall 2014 (C or better)
8	2	TBD	TBD	TBD
25%		TBD	To Be Determined	

Prior to the fall 2012 cohort, student success was based on a grade of "C" or better in the math progression sequence. Beginning with the fall 2012 cohort, a "B" or better was needed to progress to the next course. Because of the change in policy, the fall 2012 cohort will be used as the baseline for the 3 semester progression. Using the fall 2012 cohort information of 4-5% as the rate of students who started with DMAT 0313 and went on to complete Math 1314 (exact rates cannot be calculated until the conclusion of fall 2013), we will place a target measurement representing a 5% increase per year of the QEP's lifecycle based on Fall cohort DMAT 0313 enrollment: 1st year = 10%; 2nd year = 15%; 3rd year = 20%, and 4th year = 25% who complete Math 1314.

Improved Student Learner Outcomes in DMAT 0313

All incoming DMAT 0313 students are pre-tested to establish their level of math skills in each of the student learner outcomes. An external test, the Diagnostic Accuplacer, is used to determine a student's strengths and weaknesses. The students complete the Diagnostic Accuplacer again at the end of the semester to determine an improvement in their math skills. The target for each semester is to increase 25% from pre-test to post-test on a semester by semester basis.

Table 29: Pre/Post Test		
	Spring 2013	**Target**
DMAT 0313	6% increase	25% increase from pre-test

Beginning Algebra and Geometry (DMAT 0313) SLOs

1. **Real Numbers**: Students will be able to identify, operate and perform standard operations with real numbers
2. **Linear Equations, Inequalities, and Systems:** Students will apply theorems to solve linear equations, inequalities, and systems, and graph linear relations using two or more techniques.
3. **Quadratic Expressions and Equations:** Students will be able to identify and factor special structures and solve quadratic equations through factoring.
4. **Algebraic Expressions and Equations**: Students effectively perform standard operation on polynomials and algebraic fractions and manipulate express with integer exponents.
5. **Word Problems and Applications:** Students effectively model verbal information with algebraic equations and inequalities and interpret the solution.

Improved Student Learner Outcomes in MATH 1314

All incoming MATH 1314 students are pre-tested to establish their level of algebra skills in each of the course SLOs. A common exam was created by the Math Department faculty to assess student knowledge at the beginning of the semester. At the end of the semester, the students are once again tested to determine a change in their overall grasp of the concepts as reflected in the SLOs. As shown on Table 30 on the following page, the target is to increase 25% from pre-test to post-test on a semester-by-semester basis.

Table 30: Pre/Post Test		
	Spring 2013	**Target**
Math 1314	25% increase	25% increase from pre-test

College Algebra (MATH 1314) SLOs

1. **Axioms and Basic Theorems:** Students will be able to identify and apply axioms and basic theorems for the Real and Complex Number system, with appropriate terminology and notation.
2. **Rational Numbers:** Students will be able to apply standard techniques to simplify and operate with rational expressions and complex fractions.
3. **Polynomials:** Students will be able to correctly define and perform standard operations on polynomials.
4. **Exponentials:** Students will be able to apply the governing properties of exponents to simplify and operate on expressions with various exponentials.
5. **Solving Equations and Inequalities:** Students will be able to find solution sets of various equations and inequalities of the following types: polynomial, rational, exponential, absolute value, radical, logarithmic and systems.
6. **Graphing Techniques:** Students will be able to correctly graph functions or relations of the following types: polynomial, rational, exponential, radical, logarithmic, and conic sections.
7. **Applications:** Students will be able to select the appropriate solution method for questions in applied mathematics.

Student Technology Engagement: In addition to SLOs in MATH 1314 and DMAT 0313, we will assess the application of technology and its ability to strengthen the students' experience and engage them with the content. Ranger College created an internal instrument used by students to self-report their technological engagement in these courses. We will use the survey's "active and collaborative learning" section to assess improvement. Student responses gauging their technological engagement in DMAT 0313 are expected to increase to 65% by the end of the QEP's lifecycle, and to 60% for MATH 1314 students. For more details, refer to Survey 5 in the Appendix.

Table 31: Student Engagement		
	Spring 2013	**Target***
DMAT 0313	42%	65%
MATH 1314	38%	60%
*3% per semester over 4 years		

VI. Actions to be Implemented

Engage With E-Learning contains three objectives: 1. Improve campus technology infrastructure. 2. Improve faculty expertise in use of instructional technology. 3. Enhance instructional course design for increased student engagement. Based on the desired outcomes, the assessment team developed a threefold strategy for achieving these objectives.

Objective #1: Improve campus technology infrastructure

1a. Increase Internet Access
1b. Increase Technology Hardware
1c. Increase Technology Software
1d. Hire IT Director and Retention Coordinator

Technology Committee: Ranger College formed a technology committee during the QEP planning stages, charging its members with laying the groundwork capable of supporting the college's vision. This committee was comprised not only of IT specialists, faculty, and staff, but also of members of the Maintenance Department, who install and oversee the necessary hardware. The committee began the process by assessing hardware, software, and internet availability across the three campuses. While the centers at Brown County and Erath County required only routine upgrades, the main campus in Ranger lacked basic Internet access in several of its buildings. Before the official timeline of the QEP began, money was budgeted to account for widespread hardware improvements. Equally important, the college hired a full-time IT director at this time to oversee the operation, which required the assistance of numerous vendors and technicians. Noteworthy include the following:

Internet

- 20-megabyte fiber-optic line installed at Ranger campus
- A second 20-meg line will be installed at Ranger campus

- New routers/access points in all buildings on Ranger campus

Technology Hardware

- Fifty (50) laptops to replace computers in Developmental Math and Reading labs
- Fifty-five (55) computers for the learning labs at Erath County
- Twenty-five (25) new/refurbished computers added to the Ranger library
- One-hundred (125) Windows 7 and Microsoft Office licenses
- SmartBoards purchased during each year of QEP
- Graphing calculators purchased
- New Tandberg units through RUS Grant
- Commercial Blackboard server for all campuses

Software

- Blackboard integration with POISE student management system; populates Blackboard courses with enrolled students
- Absence/early alert program
- Microsoft applications
- IncludED architecture

Hire IT Director and Retention Coordinator

Objective #2: Improve faculty expertise in use of instructional technology

2a. Training in Blackboard LMS
2b. Training in Hardware Equipment and integration of technology methods
2c. Training in MyMathLab software

Training with E-Learning Specialists: Monies will be allocated to funding our E-learning Specialists. These individuals are tasked with overseeing the continued training of faculty in the new technologies, deliveries, and best practices. Surveys revealed that most faculty members lack training in both hardware and software and do not currently employ these in their classrooms. These results can be found in Survey 6 in the Appendix. Ranger College will contract with the Region 14 Educational Service Center to provide five days of professional development per year for Ranger College faculty. The ESC provide professional development in distance learning, including the usage of the new ITV Tandberg Systems, document cameras, SmartBoard systems, and various methods to integrate multimedia. Blackboard Corporation has

already provided two days of administrator training for Blackboard Learn and will eventually deliver two additional days of advanced Blackboard professional training to 15 online instructors. An in-house E-learning Specialist who has received both trainings will then hold Blackboard training sessions, basic and advanced, for additional faculty, as per the cascade model discussed in Section IV: Literature Review; in the cascade model, a small number of faculty members receive dedicated training on- or off-site, then return to instruct others during professional development sessions. Full-time faculty will be trained first, followed by adjuncts, so that all courses will be in Blackboard Learn format by the end of the QEP cycle. This same model will be used for the MyMathLab training. An external specialist will provide initial training with an E-learning Specialist providing additional training as needed to math faculty.

Overall, **Engage With E-Learning** endeavors to bring faculty members to the same level of expertise on all available technologies and ensure that they build these innovations into their curriculum. Technology levels differ wildly from one classroom to the next, with some instructors integrating technology fully into their curriculum while others rarely employing technology at all. Ranger College favors the cascade model not only because it helps connect these faculty through a shared experience during our in-service training, but "it is also very cost-effective and focuses on building a sustained infrastructure for support" (Bouffard et al).

Objective 3: Enhance Course Design for Student Engagement

3a. Electronic Course Access; Blackboard Curriculum Alignment
3b. Implement Student Attendance Reporting/ Early Alert System
3c. Curriculum Re-design; technology integration in targeted courses

Electronic Course Access; Blackboard Curriculum Alignment: A total of 221 classes were offered in the spring 2013 semester. Of these, 37 classes (17%) offered course curriculum exclusively online through the Blackboard Learn System, but no standardized

curriculum format was used among them. *The QEP changes that, stressing consistency and uniformity.*

All courses and course sections will standardize their content on Blackboard, giving students a consistent experience. Blackboard administrators and the E-learning Blackboard Specialist will determine the standard format and see to its adoption among all faculty members. Conventional classes (i.e., those based in traditional classrooms rather than online) will establish Blackboard accounts where they will present additional class information, lecture notes, course resources, et cetera. This is especially important for student-athletes who are often away for events; they can access any material they might have missed. Mandatory grade reporting will be part of the Blackboard format, so students in all courses—online and traditional—can access their grades at all times. The QEP leadership team believes that students who can access their grades anywhere, at any time, are more aware of their progress and more likely to succeed.

Implement Student Attendance Reporting/Earl Alert System: An important metric in determining student engagement is simply whether or not a student attends class. Before 2011, Ranger College did not report student absences. In the fall of 2011, the Faculty Association expressed concern at the accelerating number of student absences in the classroom. The members voted to voluntarily submit a list of students with excessive absences on the Ranger campus to the college administration. Faculty members emailed a list of student absences, and these numbers in turn were delivered to coaches and activity sponsors. This process proved to be inconsistent and was not time-sensitive.

When the computer infrastructure was in place due to the changes brought about by **Engage With E-Learning**, a different solution is possible. The QEP implements a consistent absence-reporting format for use on all campuses. It begins with implementation on the Ranger

campus and progresses to both the Erath and Brown campuses in later phases. Ranger College will purchase a license for early alert reporting software that enables all instructors to easily submit absences, which are then instantly accessible by all concerned parties, such as the Dean of Students, counselor, Student Support Services, coaches, Retention Coordinator, and activity sponsors who perform important roles in assuring that students attend class regularly.

Funded by the U.S. Department of Education, Student Support Services at Ranger College is designed to help students be successful in their educational career. The program helps students with their academic development, basic college requirements, test-taking skills, study skills, time management skills, note-taking skills, and test anxiety. SSS works with individual students who are enrolled in the program to prepare a Student Success Plan (SSP) that aggregates information about the student's school, life, educational goals, and career goals. The SSS office is comprised of Director Jim Cockburn and his staff, including a tutor coordinator, a transfer/career advisor, and an information specialist. Armed with absence-tracking data, the SSS office is able to be more assertive in targeting students and assume a much more prominent role in ensuring student success.

Engage With E-Learning provides a bridge between faculty and Student Support Services and other peer tutors. If the missing component of an early alert system was the student's failure to follow through after receiving a warning, then SSS would play an active role in making sure each student enrolled in the support program had all the tools necessary to make up lost ground.

In addition to absences, grades are reported twice per long semester. All concerned parties monitor the data to see if the implementation of this early alert system results in a measurable uptick in student success, as it did at Irvine Valley College, or if additional services

need to be coupled to the system, as was the case at Columbia College (Section IV: Literature Review). This allows tutors to understand which students need additional tutoring and supplemental instruction. Based on research, the QEP assessment team has concluded that Ranger College's tutors, mentors, and Student Support Services are integral to the process of improving student success rates, using the absence-reporting data to individualize their direct work with at-risk students. Future assessment will prove or disprove this idea.

Curriculum Redesign; technology integration in targeted courses: One developmental course, DMAT 0313 (Beginning Algebra and Geometry) and one gateway course, MATH 1314 (College Algebra) were chosen for the application and assessment of the QEP. Only conventional and ITV classes on all campuses will implement the curriculum re-design and technology integration. Enrollment for 2012-2013 for conventional and ITV classes in DMAT 0313 was 126 students and 361 students in MATH 1314. The following integration of technology will be included in the curriculum redesign of DMAT 0313 and MATH 1314:

- Pre-purchase of course materials: IncludED and Graphing Calculators
- Computerized diagnostic testing; create computerized course of study
- Integrate technology applications for increased student engagement
- Design courses utilizing Blackboard with online tutorial support system

Math Department instructors are currently using MyMathLab as a supplement in math courses. However, only the basic features (homework and quizzes) are being utilized. With additional training in advanced features (testing, prerequisites, media assignments, study plans, gradebook, discussion boards, ClassLive, chat, pre/post testing, mastery points, and online textbook), additional technology integration will be incorporated into the course curriculum for increased student engagement.

Ranger College will purchase an interface called IncludED that permits students to gain access to books and other required course materials on the first day of class, without having to

wait for their financial aid awards to move through the system. This is important for students who depend on financial aid to pay for books, as that aid is not dispensed until later in the semester. IncludED ensures that students don't need to wait to have the materials they need. In math courses, many students attend class without purchasing the required calculator, simply due to financial constraints. In order to give all students the best chance for success, **Engage With E-Learning** provides the technology they need, purchasing more calculators during each phase.

Students are placed in a developmental course according to Accuplacer or other test scores, with no additional information on the student's ability to meet specific student learning objectives. In order to better assess the student's knowledge and area of need, the QEP planning and assessment team (which included math faculty) decided to utilize a computerized diagnostic test to determine areas of need for the identified SLOs for DMAT 0313. The Math Department selected assignments for students to complete in order to master the identified SLOs. MyMathLab will be designed so that students may work at their own pace and spend the necessary time on SLOs not already mastered. A grade of 90 on each quiz will be considered as "mastered" for that assignment and will allow students to move to the next assignment. Media assignments through MyMathLab will allow students to see content if extra instruction is needed and to get ahead or gain a "refresher." MyMathLab also creates a personalized study guide for the exam at the end of each chapter, based on questions that the student missed throughout the quizzes and homework. At the end of the semester, students take the Diagnostic Accuplacer as the post-test to determine progress.

Students in College Algebra will be pre-tested with a common departmental exam to determine areas of need. The Math Department selected assignments for students to do in order to master the identified SLOs. As in the case of DMAT 0313, MyMathLab will be designed so

that a students may work at their own pace and spend the necessary time on SLOs not already mastered. A grade of 90 on each quiz will be considered as "mastered" for that assignment and will allow students to move to the next assignment. At the end of the semester, the students will take the common exam as a post-test to determine progress made.

In both the DMAT 0313 and MATH 1314 courses, SmartBoard usage, Quizlet, Poll Everywhere, and the ShowMe app will be used by both faculty and students for additional engagement activities. Quizlet is an online notecard study plan, Poll Everywhere is an interactive polling site, and ShowMe is used to created illustrated step-by-step instructional videos. Other technological application such as the Winplot, Excel, and GeoGebra will be integrated into the classroom for increased student-engagement activities. In Math 1314, instructors will design assignments that will require students to utilize technology through research and data collection.

Math faculty will design the DMAT 0313 and MATH 1314 courses in the recommended standardized Blackboard format. After the Blackboard courses are created online, the Math Department will create tutorials and post them online.

The QEP leadership team firmly believes that the integration of technology in the classroom engages students to the point that they enjoy class activities and thus attend class more regularly. Class attendance data will be used to gauge the effectiveness of these strategies. **Engage With E-Learning** reduces student absences by providing more meaningful content delivered in a more engaging and accessible manner.

VII. Implementation Timeline

In order to fulfill the vision of **Engage With E-Learning**, it was necessary first to put into place the proper infrastructure, very little of which was in place before the planning stage of the QEP. The gradual development of our improvement plan led to what we refer to as "Phase Zero," the pre-cursor to the QEP. The timeline detailed here begins with the planning stage in 2011 and details the work of Phase Zero, as we construct a suitable framework for everything that follows, until the year 2018. Without the substantial changes introduced across our academic community in Phase Zero, we would be unable to implement the QEP.

Planning: August 2011 to September 2012

- Introduce the QEP concept to the college, the students, the Board, and the community
- Form initial committees, appoint QEP Director and explore ideas
- Survey students, faculty, and staff

INFRASTRUCTURE

Phase Zero: September 2012 to December 2013

- Acquire new PCs for developmental labs and faculty
- Purchase license upgrades for Microsoft products
- Improve Internet access on the Ranger main campus
- Purchase Blackboard Server and software
- Begin first wave of purchases for SmartBoard systems
- Purchase Tandberg ITV units
- Hire IT position
- Hire Retention Coordinator

Phase One: Spring 2014 to Spring 2015

- Purchase additional bandwidth capability
- Purchase second wave of SmartBoard systems
- Purchase additional computers
- Purchase second wave of software licenses, IncludED, Absence/Early Alert software
- Purchase graphing calculators

Phase Two: August 2015 to December 2016

- Purchase additional SmartBoard systems

Phase Three: January 2017 to December 2018

- Assess purchase of bandwidth, hardware, software, and personnel
- Assess student satisfaction with infrastructure and determine additional needs

FACULTY DEVELOPMENT

Phase Zero: September 2012 to December 2013

- Provide Blackboard training for administrators and E-Learning Specialist
- Survey faculty knowledge in technology including Blackboard, hardware, and new technology integration teaching methods
- MyMathLab E-Learning Specialist training

Phase One: Spring 2014 to Spring 2015

- E-learning Specialist mentors basic Blackboard training for conventional full-time faculty
- Online faculty receive advanced training by Blackboard specialist.
- Faculty receive training on new Tandberg systems and delivery methods
- Faculty receive training on new technology integration methods for engagement
- E-learning Specialist trains faculty in SmartBoard usage
- Math faculty receive MyMathLab advanced training
- E-Learning Specialist helps faculty implement advanced features of MyMathLab in

Phase Two: August 2015 to December 2016

- Adjunct faculty mentored by E-Learning Specialist to receive Blackboard training
- All faculty utilize Blackboard as LMS for all courses
- New faculty receive training

Phase Three: January 2017 to December 2018

- Measure number of participants completing training of Phase I; report results to Vice President for Instruction
- Measure number of participants completing training of Phase II; report results to Vice President for Instruction
- Assess success of Phases One and Two training; determine additional training needed

ENHANCE COURSE DESIGN FOR STUDENT ENGAGEMENT

Phase Zero: September 2012 to December 2013

- Blackboard administrators and E-Learning Specialist establish course standards
- Assess need for absence reporting; determine system to be utilized

- Determine targeted courses to be used for assessment of QEP

Phase One: Spring 2014 to Spring 2015

- Pilot absence reporting system on Ranger main campus; make necessary changes
- Full-time faculty design/redesign courses to utilize Blackboard
- Create online tutorials for DMAT 0313; integrate into Blackboard
- DMAT 0313 redesigned to integrate technology
- Pilot course redesign for DMAT 0313 in spring of 2015; make necessary changes

Phase Two: August 2015 to December 2016

- Implement absence/early alert reporting system on all campuses
- Adjunct faculty design/redesign courses to utilize Blackboard
- Create online tutorials for MATH 1314; integrate into Blackboard
- Implement course redesign for DMAT 0313 in the fall of 2015
- MATH 1314 redesigned to integrate technology
- Pilot course redesign for MATH 1314 in the spring of 2016; make necessary changes
- Implement course redesign for MATH 1314 in the fall of 2016

Phase Three: January 2017 to December 2018

- Assess Phase I and Phase II's number of courses utilizing Blackboard in standardized format
- Assess student engagement with technology enhanced classrooms
- Assess data for increased student attendance
- Assess student success for DMAT 0313 and MATH 1314
- Assess student retention/progression in targeted courses
- Assess increases in student learner outcomes on post-test for targeted courses

Table 32 on the following page provides a detailed view of our implementation timeline.

Table 32: Engage With E-Learning Timeline

Phase 0		Phase I (post-visit and ramp up)		Phase II (expand, revise)		Phase III (complete, assess, report)	
Pre-Fall 2013	Fall 2013	Spring 2014—Spring 2015		Fall 2015—Fall 2016		Spring 2017—Fall 2018	
To semester of SACS Onsite Visit	Semester of SACS Onsite Visit						
A	B	A	B	A	B	A	B
Objective #1: Improve campus technology infrastructure							
1a 20 mg Internet bandwidth, Servers, connect buildings		20 mg of additional Internet bandwidth				Assess purchase of Internet bandwidth; Student satisfaction with Internet	
1b 2 Tandberg Distance learning Systems & Server Purchase Blackboard Server and software 7 Smart Board Systems 90 computers	4 Smart Board Systems 25 computers 1 Tutoring ITV system	5 Smart Board Systems 75 Graphing Calculators	25 computers	5 Smart Board Systems	5 Smart Board Systems	Assess purchase of hardware; Student satisfaction with hardware for student learning	
1c 100 Microsoft licenses	Purchase Blackboard Integrate Software	Purchase IncludED software	Purchase Absence/Early Alert software 25 Microsoft Licenses			Assess purchase of software; Student satisfaction with IncludED software and Absence/Early Alert software	
1d Hire IT Director—1/2 time QEP Hire Retention Coordinator—1/2 time QEP						Assess hiring of personnel; student satisfaction with services	
Objective #2: Improve faculty expertise in use of instructional technology							
2a	Blackboard training for Administrators &	Conventional full-time faculty mentored by E-	Online faculty to receive advanced Blackboard training	Adjunct faculty mentored by E-learning specialist	All faculty utilize Blackboard as LMS	Measure number of participants completing training	Measure number of participants completing training

Phase 0		Phase I (post-visit and ramp up)		Phase II (expand, revise)		Phase III (complete, assess, report)	
	Blackboard Specialist	learning specialist to receive basic Blackboard training	by Blackboard Corp; conventional full-time faculty mentored by E-learning specialist to receive basic Blackboard training	to receive Blackboard training	campus wide, new faculty receive training	of Phase I ; report results to VP of Instruction	of Phase II ; report results to VP of Instruction
2b Survey faculty knowledge in hardware usage and technology integration methods	Determine training necessary; determine E-Learning specialist;	Faculty training for new Smart Boards and ITV equipment and integration of technology methods by E-learning specialist	Faculty training for new Smart Boards and ITV equipment and integration of technology methods by E-learning specialist	Faculty training for new Smart Boards and ITV equipment and integration of technology methods by E-learning specialist	Faculty training for new Smart Boards and ITV equipment and integration of technology methods by E-learning specialist	Measure number of participants completing training of Phase I ; report results to VP of Instruction	Measure number of participants completing training of Phase II ; report results to VP of Instruction
2c	Determine training necessary; determine E-Learning specialist; E-Learning Specialist receives training	Math Faculty receive advanced MyMathLab training	E-learning Specialist helps faculty implement MyMathLab training in DMAT 0313 Sp 2015	E-learning Specialist helps faculty implement MyMathLab training in MATH 1314 Fall 2016	E-learning Specialist helps faculty implement MyMathLab training in MATH 1314 Fall 2016	Measure number of participants completing training of Phase I ; report results to VP of Instruction	Measure number of participants completing training of Phase II ; report results to VP of Instruction
Objective #3: Enhance instructional course design for increased student engagement							
3a	Blackboard course standards established by Blackboard administrators and E-specialist	Full-time faculty design/re-design courses implementing and utilizing Blackboard	Full-time faculty design/re-design courses implementing and utilizing Blackboard	Adjunct-faculty design/re-design courses implementing and utilizing Blackboard	Adjunct-faculty design/re-design courses implementing and utilizing Blackboard	Assess Phase I's number of courses utilizing Blackboard in the standardized format; report results to VP of Instruction	Assess Phase II's number of courses utilizing Blackboard in the standardized format; report results to VP of Instruction
3b	Assess need for absence reporting, determine system needed	Pilot absence/early alert reporting system Ranger campus; collect data; make necessary changes	Pilot absence/early alert reporting system Ranger campus; collect data; make necessary changes	Implement absence/early alert reporting system on all campuses; collect data; report to administration	Implement absence/early alert reporting system on all campuses; collect data; report to administration	Assess data for increased student attendance.	. Assess data for increased student attendance.
3c	Determine targeted courses	Begin curriculum re-design implementing technology engagement activities in targeted courses	Spring--Pilot course re-design in DMAT 0313 make necessary changes	Fall--Implement course re-design in DMAT 0313; Spring--Pilot course re-design in MATH 1314; make necessary changes	Fall—Implement course re-design in MATH 1314	Assess Student Engagement, Pre/Post test Results, Student Success, Retention; report results to VP of Instruction	Assess Student Engagement, Pre/Post test Results, Student Success, Retention; report results to VP of Instruction

VIII. Budget and Resources

Ranger College is committed to the QEP and has strong support from the College administration and Board of Regents to ensure its success through adequate funding and facilities. Ranger College has a sound economic base, financial stability, and adequate resources to support the mission of the institution and the scope of its programs and services. **Engage With E-Learning** requires years of implementation and analysis, and it also demands a significant commitment of resources. Ranger College is fortunate enough to possess the human and financial resources to see the QEP through to its conclusion in 2018.

Table 33: QEP Budget Committee	
Tammy Adams, Chair	Chief Financial Officer
Linda Gann, QEP Director	Professor of Business, Workforce Division Chair
Sandi Herod	Board of Regents
Billy Adams	VP for Instruction

The 2012 audit records the college's net assets as of August 31, 2012 at $5,026,475 which was an increase of $1,246,270 from the period ending August 31, 2011. This amount includes investment in capital assets at $589,479, restricted net assets of $589,479, and $3,183,944 in unrestricted assets as of August 31, 2012. The college's financial position remains strong, with adequate liquid assets at a reasonable level of unrestricted net assets.

To insure the capability of the QEP and to off-set technological expenditures, Ranger College will implement a $4 per semester hour technology fee in the spring of 2014. Based on the 2012-2013 credit hour totals, this fee will generate an additional $133,620 in revenue.

In the planning and development of the QEP, the team identified the personnel, equipment, and financial resources necessary for the successful implementation of **Engage with E-Learning**. Most of the required expense for the QEP will be for the technological

infrastructure and administration of the QEP. Approximately 50% of the QEP's budget will be utilized on equipment and 17% on additional bandwidth. A large portion (37%) of the equipment budget will be funded by a recently awarded USDA Rural Utilities Services Distance Learning & Telemedicine Grant. Carl Perkins funds and some Title III Student Support Services funds will account for 3% of the equipment budget.

Approximately one fourth (23%) of expenditures will be for personnel cost, including the reassignment (50% salary) of the QEP Director and the Retention Coordinator, 50% salary of the new IT Director, and stipends for the math personnel for curriculum redesign. Professional development training for faculty on newly acquired software will also be a required expenditure.

Table 34: QEP Master Budget

	Phase 0 Jan 2012-Fall 2013	Phase I Spring 2014-Spring 2015	Phase II Fall 2015-Fall 2016	Phase III Spring 2017-Fall 2018
PERSONNEL:				
QEP Director—half-time	39,750.00	39,750.00	39,750.00	26,500.00
IT Position—half-time	30,000.00	30,000.00	30,000.00	20,000.00
Retention Coord.—half-time	10,500.00	31,500.00	31,500.00	21,000.00
Curriculum Development Stipends—2 full-time faculty	1,500.00	9,000.00	6,000.00	
QEP Lead Writer	4,500.00	1,500.00	3,000.00	1,500.00
TOTAL PERSONNEL:	**86,250.00**	**111,750.00**	**110,250.00**	**69,000.00**
TRAINING:				
Blackboard Administrator Training	7,377.91	7,400.00		
E-Learning Specialist—Blackboard		4,500.00	4,500.00	
MyMathLab Training/E-Specialist		4,000.00		
Faculty Technology Training	4,200.00	4,200.00	3,200.00	2,125.00
TOTAL TRAINING:	**11,577.91**	**20,100.00**	**7,700.00**	**2,125.00**
SUPPLIES:				
Supplies	6,698.91	1,500.00	1,500.00	1,000.00
ITV Line/Internet Line	63,238.68	99,000.00	99,000.00	66,000.00
Software and Licenses	5,220.00	1,500.00		
Marketing Materials	7,479.30	1,000.00	1,000.00	

Table 34: QEP Master Budget				
	Phase 0 Jan 2012-Fall 2013	Phase I Spring 2014-Spring 2015	Phase II Fall 2015-Fall 2016	Phase III Spring 2017-Fall 2018
Internet Bridge	13,708.00	3,500.00	5,250.00	3,500.00
Testing Instrument	633.00	1,250.00	1,500.00	500.00
Technology Software	7,000.00	11,000.00		
TOTAL SUPPLIES:	**103,977.89**	**118,750.00**	**108,250.00**	**71,000.00**
TRAVEL	**3,500.00**	**4,500.00**	**4,500.00**	**-0-**
EQUIPMENT:				
Blackboard Servers	72,992.04	35,348.00	73,545.00	
Internet Building Connections	55,120.56			
SmartBoard Systems	54,000.00	30,000.00	60,000.00	
Computers	59,985.60	16,250.00		
Graphing Calculators		9,750.00		
*RUS Grant	323,616.00			
*SmartBoard Systems	48,000.00			
TOTAL EQUIPMENT:	**613,714.20**	**91,348.00**	**133,545.00**	**-0-**
TOTAL BUDGET:	**819,020.00**	**346,448.00**	**364,245.00**	**142,125.00**

IX. Assessment

Ranger College is committed to an ongoing self-assessment, developing various instruments to gauge the results of its student-support efforts. These measurements will allow us to assess the plan throughout each phase of implementation and modify our efforts for continuous improvement. The progress toward the achievement of these goals will be quantified via assessment of the outcomes. Linda Gann, Director of the QEP, along with the full-time math faculty, will be responsible for ensuring all evaluations are completed. The collection of data and the reporting of results will follow the college's regular evaluation cycle. The Director will ensure that both formative and summative evaluations will be completed.

Formative Evaluation: The formative evaluation is designed to provide periodic reviews regarding the progress of the project. As the outcomes are assessed, the use of those results will help us to make any necessary adjustments to the methods used to execute the QEP's objectives. As a part of the overall planning and evaluation that applies to all college programs, this information will be reviewed by the appropriate administrative personnel to ensure that the QEP is well managed and on track to accomplish its goals.

Summative Evaluation: The quantitative and qualitative data that is gathered over the course of the QEP project will provide a longitudinal analysis that will prove whether the selected methods have been effective. In accordance with SACS requirements, at the end of the fourth year, a summary report will be submitted, examining how well the goals and outcomes were met, as well as the overall impact of the QEP on student learning and student success.

Assessing the QEP Focus, Objectives, and Outcomes

The focus of the QEP is to increase student success and student learning by engaging students through the use of technology. It contains three objectives:

Objective #1: Improve campus technology infrastructure

Objective #2: Improve faculty expertise in use of instructional technology

Objective #3: Enhance instructional course design for increased student engagement

The effectiveness of integrating technology into classroom teaching and allowing for innovative new teaching methods will be assessed at the end of each fall and spring semester. In addition to the submission of the results and use of results in the college's regular planning and evaluation system, the results will be reported each August to the appropriate administrative personnel for monitoring of the QEP. This procedure allows for any necessary adjustments to the pilot program based on the evidence presented.

Assessing the Effectiveness of Objective 1: Improve campus technology infrastructure.

Among the easier objectives to evaluate, an improvement of technology and its infrastructure across all three campuses will be measured according to whether or not the software and equipment, including its various components, were purchased, installed, and are performing for student and faculty usage. Completion of the hiring process for an IT Director and Retention Coordinator will be the assessment measure for personnel.

In addition to physical infrastructure measurements, the Technology Committee will conduct an internal technology satisfaction survey for faculty and students each year. The results will be used to gauge satisfaction and effective implementation of the infrastructure and any future infrastructure needs. Table 35 shows the objectives and outcomes related to campus technology infrastructure.

Table 35: Objective #1 Assessment		
		Target
Objective #1	**Improve campus technology infrastructure**	
Outcome 1a—Increase Internet Access	To increase Internet bandwidth from 1.5 to 40 mg level on Ranger campus with wireless access to all buildings	40 mg bandwidth
Outcome 1b—Increase Technology Hardware	To purchase new Blackboard Server, Tandberg ITV systems, computers, and SmartBoards	Blackboard Server, 2 Tandberg Systems, 140 computers, 27 Smart Boards
Outcome 1c—Increase Technology Software	To purchase Blackboard Integration software, IncludED software, Absence/Early Alert software, and Microsoft licenses	125 Microsoft licenses, acquire software
Outcome 1d—Hire Personnel	To hire IT Director and Retention Coordinator. Prior to QEP these positions did not exist.	Hire IT Director and Retention Coordinator
Outcome 1a-1d Student Satisfaction	To 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

Assessing the Effectiveness of Objective 2: Improve faculty expertise in use of instructional technology.

Crucial to the success of the QEP is to have faculty which has been trained in the college Learning Management System, technological hardware equipment used in the classroom, and innovative teaching methods of integrating these into the classroom. Target-specific courses also require that all math faculty are trained in the usage of the MyMathLab software. Professional development will be assessed based on the percentage of faculty completing training in the specific areas. Table 36 shows the objectives and outcomes related to professional development.

Table 36: Objective #2 Assessment		
		Target
Objective #2	**Improve faculty expertise in use of instructional technology**	
Outcome 2a—Professional Development—Blackboard	To increase faculty knowledge in Blackboard LMS. Target: 100% of faculty will complete Blackboard training	100%
Outcome 2b—Professional Development—Hardware and Integration methods	To increase faculty knowledge in usage of SmartBoards, ITV Tandberg systems, and integration of technology methods. Target: 100% of ITV instructors and 100% of faculty who have access to SmartBoards will complete training.	100%
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%

Assessing the Effectiveness of Objective 3: Enhance instructional course design for increased student engagement.

Enhancing instructional course design will target two courses for assessment purposes: a developmental course (DMAT 0313) and a "gatekeeper" course (MATH 1314). The overall effectiveness of all the measures below will determine the success of integrating technology for increased student learning.

Assessment will measure if all courses and course sections present curriculum in a standardized format on Blackboard, giving students a consistent experience. Attendance/Early Alert reports will be used to assess the increase in student attendance in the targeted math courses. The pre-test baseline results will be compared with the post-test to determine increase of SLOs. Grades of a "B" or better in DMAT 0313 and a "C" or better in MATH 1314 will be used to measure the student success rate. These student success rates will then be used to measure retention/progression of students entering DMAT 0313 and those who complete MATH 1314. Assessment of retention/progression will be determined as a percentage based on

enrollment each fall semester. Students will use the Technology Engagement Instrument to self-rate their level of engagement in the targeted courses. Table 37 shows the objectives and outcomes related to enhanced course design for increased student engagement.

Table 37: Objective #3 Assessment		
		Target
Objective #3	**Enhance instructional course design for increased student engagement**	
Outcome 3a—Electronic Course Access--Blackboard	To increase student access to course curriculum online. Target: 100% of courses will be accessible on Blackboard in standardized format; presently 17%.	100%
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	4 weeks: DMAT 0313-85%, MATH 1314-95% will miss less than 4 times End of sem: DMAT 0313 & MATH 1314—50% will miss less than 4 times
Outcome 3c—Curriculum re design; Technology integration in targeted courses	Increase student success rates by 10% in targeted courses from baseline of DMAT 0313—55% to 65% and MATH 1314—58% to 68% To increase retention/progression percentage of students who begin in DMAT 0313 and who complete MATH 1314 from 4% to 25% of entering DMAT 0313 To increase post-test student learner outcomes by 25% from pre-test. Target: DMAT 0313 from 6% to 25% and MATH 1314 maintain 25% rate	DMAT 0313—65% MATH 1314—68% 25% of entering DMAT 0313

Table 37: Objective #3 Assessment		
	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%	25% DMAT 0313- 65% MATH 1314- 60%

X. Conclusion

No plan is perfect. But **Engage With E-Learning** seems a perfect fit for Ranger College. The QEP topic evolved organically from the unique needs of the college and its highly diverse student population. All constituencies contributed to its development and have expressed enthusiasm to implement its various components over the coming years. Shaped by a review of the current literature, the QEP equips the Ranger College faculty and staff with the tools and knowledge needed to engage students in a dynamic, technology driven environment. Our shared goal is student success. **Engage With E-Learning** ensures that we meet that goal.

XI. Glossary

E-Learning – E-learning encompasses a wide array of classroom activities that are enhanced by multimedia and interactive opportunities for students to engage more directly with the material, both online and offline. E-learning enriches a classroom by helping the instructor present audio, streaming video, podcasts, animation, satellite feeds, television, slideshows, and local intranet-based activities.

Dual-Credit Student – A student currently enrolled in high school who receives credit hours at Ranger College while simultaneously fulfilling high school graduation requirements.

E-Learning Specialist – A faculty/staff member whose primary function is to oversee the implementation of new technologies and train others in their optimization.

Formative Assessment – Any assessment activity done during the learning activity for the purpose of monitoring and guiding learning while it is still in progress.

Objectives – Description of skills or knowledge attained through participation in a program, course, or activity. Objectives identify what is expected at the end of instruction.

Retention/Progression – The ability to keep students enrolled on a semester-by-semester basis progressing from developmental through completion of gateway courses.

Student Engagement: Students are engaged "when they devote substantial time and effort to a task, when they care about the quality of their work, and when they commit themselves because the work seems to have significance beyond its personal instrumental value" (Newmann 242).

Student Learning – The improvement of a student's skill set or knowledge base as the result of classroom instruction.

Student Success – The student completes the course with a grade of "C" or better in academic courses and a "B" or better in developmental courses.

Summative Assessment – Any assessment activity done at the end of the learning process to judge the success of that process at its completion.

Telepresence – A virtual presence at a remote location, made possible by distance-learning technologies.

XII. Appendices

Appendix 1: Works Cited

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Appendix 2: Surveys

Survey 1: Student General Technology - Spring 2012					
1 Do you have a personal computer that you use on campus?	Yes---85%	No---15%			
2 How old is your computer?	1 yr or less 57%	2-5 years 31%	5 to 10 years 3%	10+ years 7%	
3 Do you feel that there is a need for a student technology support service?	Yes---86%	No---14%			
4 Do you currently have a smart phone or do you plan to get one in the next 6 months	Yes---79%	No---21%			
5 How often do you access the internet each week?	Everyday 79%	4 or 5/week 9%	3 or fewer/wk 9%	Never 3%	
6 How often do you feel that the internet has been unavailable?	High reliability 10%	Good reliable 13	Varies Dailey 26	Poor quality 51	
7 What school discounted software and services would you want to purchase?	Office 39%	Operating Systems 19%	Tech Support 7%	Academic Software 7%	None 28%
8 Do you feel that the campus provides access at sufficient levels and locations?	Yes---31%	No---69%			
9 Do you feel that the computers and software in the library are sufficient for your academic needs?	Yes---59%	No---41%			
10 Are you currently enrolled in a Ranger College online course?	Yes---28%	No---72%			
11 If you have attended the Reading lab did you feel the computers and their software was adequate?	Yes---26%	No---21%	N/A---53%		
12 If you have attended the Writing lab did you feel the computers and their software was adequate?	Yes---28%	No--19	N/A---53%		
13 If you have attended the Business/Off Tech lab did you feel the computers and their software was adequate?	Yes---38%	No---24	N/A---38%		
14 If you have attended the Math/Physics lab did you feel the computers and their	Yes---27%	No---23	N/A---50%		

software was adequate?					
15 How would you rate our phone Wi-Fi in the past?	No Problem 11%	1 to 2/sem 19%	3-10/sem 7%	10-20/sem 17%	20+ sem 46%
16 If you have attended the Computers lab did you feel the computers and their software was adequate?	Yes---39%	No---24	N/A---37%		

Survey 2: Student Comments Regarding Technology - Summary

Ranger Main Campus
Internet connection is poor in all dorms.
Internet access is slow and unreliable across campus.
Students cannot access the Internet for conventional and online class use.
Students are knocked off the Internet after access is made.
Internet bandwidth should be increased.
The computers need to be upgraded.
Every student should have a Blackboard account.

Brown County
Need more computers and we need more printers/copiers.
Computers need to be updated and upgraded.
The ITV courses need support.
The Wi-Fi is more down than working.
Students need email for easier communication with other students.

Erath County
Distance class is always going down. Bad connections.
Larger computer lab.
Classrooms could use some Smart Boards.
Need student e-mail system to be able to contact other students.

Student Comments Regarding Technology – Specific Comments

Ranger Main Campus

1. Ranger Hall does not get internet.
2. The internet is terrible, can't ever get online to access online class and never have internet access at all.
3. There is one bar of connection and after I access internet it allows disconnects.
4. Internet needs to work better.
5. Wi-Fi is awful all the time.
6. Ranger halls don't even ever get the Wi-Fi; we need to get it fixed, please.
7. Better Wi-Fi and better internet!
8. Need to upgrade the internet from Kenyan quality to a developed country.
9. Awful tech here at Ranger.
10. Need to fix Wi-Fi in Ranger College.
11. Ranger Hall has no internet access ever.
12. Major technology problems. Fix everything.
13. The Wi-Fi band should be increased in Ranger Hall when it is being used during the week. It is slow also, some of the blocked sites are ridiculous, and we can't play games or anything.
14. The internet is down way too much. I believe we need to get a better provider, please fix ASAP.

15. The Wi-Fi here is horrible. I can't do anything on the internet.
16. The computers need to be upgraded.
17. Need better internet!
18. Better Wi-Fi!
19. The Wi-Fi in the Meyerson dorms is brutal! Never works, can never access the internet off of any electronics.
20. I'm very disappointed in the Wi-Fi connections and also I haven't been able to get on the internet for the last 10 days.
21. Need better internet.
22. The Wi-Fi in the dorms is horrible and very unreliable.
23. Need far more access points, too many students on Wi-Fi at the same time. Takes too long for people with online classes or doesn't work at all.
24. The internet in my room never works + it is really, really slow.
25. Want the internet to be more reliable and efficient.
26. Need fast internet and better Wi-Fi.
27. I think every student should have a blackboard account.
28. We need more connection to the internet, cuz when there is multiple people online the server takes forever.

Brown County Campus

29. Extra printer and copier needed.
30. They have a lot of people testing all the time for various things, so the computer lab and the library are off limits about 75% of the time. If we are using the computers and they need them to test and then we have to get off.
31. We need more computers and we need even more printers/copiers. The internet is down often.
32. Nor reliable internet access and equipment needs to be updated.
33. Computers are usually tied up by students other than L.V.N. students.
34. I wish high school students could use our computers less. They used them right in the middle of Finals week last semester and the computers were unavailable for all actual ranger students.
35. Printers in computer lab regularly out of ink or paper, often not working.
36. Can't always depend on the computer to get any work, because sometimes it is taken for days.
37. More students than available faculties.
38. We constantly have problems with the printers, copy machines. There need to be additional copy machines. There are not enough computers to accommodate many students.
39. Can't get Wi-Fi, it is password lock.
40. Computers need to be updated, need more computers and printers, hard to get to use at times, so many students not enough for even half the students, need more printers (on in lab always messes up). One in office is in use majority of time.
41. We need more computers. The student outnumber the computer by a lot, and they have testing for non-student, so it leaves us students without any.
42. The majority of time, when we need access to computers we cannot get it because the whole computer lab is used for one person to test. At times both labs are used for testing. As I know it is important, but our classes should be as important.
43. Not enough available space in computer lab. There is either class going on or someone testing. Printers do not work.
44. There should be additional outlets in each room for more laptop usage in the classroom.
45. Ranger needs more computers and printers that work.
46. Need to get Wi-Fi fixed.
47. Need more computers with Microsoft Office 2010.
48. Fix Wi-Fi.
49. When I had computer difficulties I was told to call the main office to get it straightened out, they could not help me.
50. The ITV courses need support.
51. I consistently get a connection time out when attempting to log on to wireless.
52. Tina does a great job assisting all tech issues, but our Wi-Fi is frequently inop.
53. The Wi-Fi is more down than working.
54. We need to be able to come to school and log onto Wi-Fi wherever it is needed.

55. Wi-Fi needs to be better, keeps disconnecting.
56. I feel it is very important to have excellent Wi-Fi access and we do not have that here.
57. So far the IT has been disappointing in that. I submitted a request for devices 2 weeks ago, and have not been contacted as of yet.
58. This is my first semester at Ranger College. So far, everything is sufficient.
59. Satisfactory.
60. Need Wi-Fi.
61. We use the internet to lock things up discussed in class. With no internet we are unable to research and get the full learning experience.
62. In the nursing program we need to access the internet. We would live feed back as to when Wi-Fi will be fixed.
63. Wi-Fi is consistently down.
64. Please, get the Ranger College-Early Wi-Fi working.
65. Most of the time the Wi-Fi does not work on my phone.
66. Unreliable Wi-Fi. Inadequate printing hardware. Excellent assist from IS dept. + administration.
67. You definitely need computer systems that work. That you can know what goes on with different programs. Students need email for easier communication with other students and the stuff.
68. We rely on internet access and for there to be none is a huge disappointment.

Earth County Campus

69. Can't have class because of Wi-Fi connection.
70. Classrooms could use some Smart Boards.
71. Larger computer lab.
72. Satisfactory.
73. More classroom space.
74. Distance class is always going down. Bad connections
75. Class cancelled because ITV doesn't work.
76. Wi-Fi works most of the time. OK
77. Need student e-mail system to be able to contact other students.
78. Bad TV connect for class. Either can't see or can't hear.

Survey 3: Faculty and Staff Technology Survey - Spring 2012					
Computer and Service Quality					
1 How many computers do you use?	None 6%	1 28%	2 23%	3 or more 43%	
2 How important is technology to your position, your effectiveness, and to your students overall performance?	Really Important 77%	Important 22%	Not Important 0%	Don't Know 1%	
3 How would you rate the IT staff?	Friendly and helpful 69%	Average 8%	Varies on each visit 6%	Poor Service 17%	
4 How many computers have you been issued by Ranger College?	None 51%	1 26%	2 6%	3 or more 17%	
5 Is your issued computer fast and reliable?	Yes 26%	No 74%			
6 How old is your issued computer?	1 year old or less 6%	2 to 5 years old 68%	5 to 10 years old 12%	10+ years old 14%	
Internet and Program Quality					
7 How often do you use the Internet each week?	Everyday 97%	4 or 5 times a week 2%	3 or fewer times a week 1%	Never 0%	
8 What would you want to purchase for your offices to solve your IT needs?	Microsoft Office 4 responses	New Operating System 2 response	Upgrade to Computer 8 responses	IT Support 5 responses	Professional Development 23 responses
9 How would you rate our IT service in the past?	Consistent high quality 12%	Generally good 32%	Quality varies daily 23%	Poor Quality 33%	
10 How would you rate our internet services in the past?	Consistent and Fast 35%	Consistent and Slow 12%	Not Consistent and Fast 8%	Not consistent and slow 31%	Never seems to work 14%
E-mail an Phone Quality					
11 How often do you e-mail each week?	Everyday 94%	4 or 5 times a week 0%	3 or fewer times a week 4%	Never 0%	
12 What would you want your email to do for your office to solve your IT needs?	Send and receive e-mail 84%	Space 6%	Provide chat 3%	E-mail Support 1%	Phone support 6%
13 How would you best rate our e-mail service in the past?	User Friendly 28%	Complicated 18%	Average 42%	Do not have e-mail 12%	
14 How would you rate our phone services in the past?	No problems 57%	1 to 2 problems a semester 17%	3-10 problems a semester 12%	10-20 problems a semester 5%	20+ problems a semester 9%

Survey 4: Technology Engagement - MATH 1314 – Spring 2013				
		Agree		**Disagree**
Technology Infrastructure				
1a	The Ranger College website is efficient and easy to navigate.	90%		10%
1b	Adequate computer access is available in the library	93%		7%
1c	Adequate computer access is available in the learning labs	88%		12%
1d	The internet connectivity at Ranger College is generally reliable to complete assignments	71%		29%
1e	Wireless passwords are easily accessed	73%		27%
1f	Student e-mail is easy to setup	79%		21%
1g	Blackboard is easy to find and access on the website	73%		27%
1h	ITV equipment is reliable and dependable	63%		36%
1i	Technical support is provided to respond to my needs when there's a problem	72%		28%
1j	The Blackboard Learning Management System adequately meets my academic needs	74%		26%
	Average	**77%**		**23%**
		Frequently	**Sometimes**	**Never**
Support for Learners				
2a	Frequency: Accessed class website through Blackboard	35%	45%	20%
2b	Frequency: Accessed course syllabi through Blackboard	29%	39%	32%
2c	Frequency: Accessed course announcements through Blackboard	32%	37%	31%
2d	Frequency: Accessed online course notes through Blackboard	27%	46%	27%
2e	Frequency: Accessed online course tutorials through Blackboard	20%	42%	38%
2f	Frequency: Accessed course lecture (YouTube) for my course through Blackboard	15%	51%	34%
2g	Frequency: Accessed my current grades for my courses through Blackboard	29%	43%	28%
2h	Frequency: Collaborated with classmates through Blackboard chat	14%	22%	63%
2i	Frequency: Attended Student Support Services tutoring	14%	27%	59%
2j	Frequency: Utilized Aleks computerized math program—Student Support Services	22%	17%	61%
2k	Frequency: Accessed online library database	25%	36%	39%
	Average	**24%**	**35%**	**41%**
		Frequently	**Sometimes**	**Never**
Active and Collaborative Learning				
3a	Frequency: Completed class assignments using technology integration	59%	295%	12%
3b	Frequency: Completed lab assignments using computerized programs.	57%	31%	12%
3c	Frequency: Used the Internet to access information to			

Survey 4: Technology Engagement - MATH 1314 – Spring 2013				
	complete assignments	38%	16%	46%
3d	Frequency: Worked with other students on projects during class utilizing technology	35%	38%	27%
3e	Frequency: Made a class presentation utilizing technology	30%	337%	37%
3f	Frequency: Worked with classmates outside of class to prepare class assignments utilizing technology	35%	37%	28%
3g	Frequency: Utilized Library database to complete assignment	39%	36%	25%
	Average	**42%**	**30%**	**28%**
		Frequently	**Sometimes**	**Never**
	Student-Faculty Interaction			
4a	Frequency: Used e-mail to communicate with an instructor	50%	27%	23%
4b	Frequency: Used chat to communicate with an instructor	25%	19%	56%
4c	Frequency: Communicated with instructor through Facebook	19%	16%	66%
4d	Frequency: Communicated with an instructor using discussion boards	16%	20%	64%
4e	Frequency: Used Class Connect to communicate with instructor	20%	20%	60%
4f	Frequency: Used Skype to communicate with an instructor	15%	18%	67%
4g	Frequency: Used a blog to communicate with an instructor	31%	18%	51%
	Average	**46%**	**36%**	**18%**
		Frequently	**Sometimes**	**Never**
	Student Effort			
5a	Frequency: Showed up to class prepared to learn	88%	9%	3%
5b	Frequency: Responded when called upon	81%	19%	0%
5c	Frequency: Contributed to class discussions	62%	35%	3%
5d	Frequency: Asked questions in class	52%	39%	9%
5e	Frequency: Engaged in class activities	78%	19%	3%
5f	Frequency: Exerted effort and concentration in learning the tasks	71%	29%	0%
5g	Frequency: Attended class regularly	68%	30%	2%
5h	Frequency: Attended lab regularly	59%	25%	16%
5i	Frequency: Used peer or other tutoring	47%	31%	22%
5j	Frequency: Independent inquiry on material not fully understood	61%	33%	6%
5k	Frequency: Accessed class website for additional information	56%	36%	8%
5l	Frequency: Collaborated with class members	50%	42%	8%
	Average	**65%**	**29%**	**6%**
			Agree	**Disagree**
	Technology Integration			
6a	Technology plays an important role in my education at Ranger College		72%	28%
6b	Class is more interesting when technology is utilized			

Survey 4: Technology Engagement - MATH 1314 – Spring 2013			
		61%	39%
6c	Technology helps me engage in class activities more effectively	66%	34%
6d	Technology increases my enjoyment of classes	69%	31%
6e	Attend class more often in classes utilizing technology	67%	33%
	Average	**67%**	**33%**

Survey 5: Technology Engagement - DMAT 0313 – Spring 2013				
		Agree		**Disagree**
	Technology Infrastructure			
1a	The Ranger College website is efficient and easy to navigate.	91%		9%
1b	Adequate computer access is available in the library	91%		9%
1c	Adequate computer access is available in the learning labs	83%		17%
1d	The internet connectivity at Ranger College is generally reliable to complete assignments	65%		35%
1e	Wireless passwords are easily accessed	75%		25%
1f	Student e-mail is easy to setup	68%		32%
1g	Blackboard is easy to find and access on the website	74%		26%
1h	ITV equipment is reliable and dependable	70%		30%
1i	Technical support is provided to respond to my needs when there's a problem	71%		29%
1j	The Blackboard Learning Management System adequately meets my academic needs	77%		23%
	Average	**77%**		**23%**
		Frequently	**Sometimes**	**Never**
	Support for Learners			
2a	Frequency: Accessed class website through Blackboard	43%	39%	18%
2b	Frequency: Accessed course syllabi through Blackboard	45%	27%	28%
2c	Frequency: Accessed course announcements through Blackboard	48%	26%	26%
2d	Frequency: Accessed online course notes through Blackboard	39%	39%	22%
2e	Frequency: Accessed online course tutorials through Blackboard	35%	26%	39%
2f	Frequency: Accessed course lecture (YouTube) for my course through Blackboard	23%	27%	50%
2g	Frequency: Accessed my current grades for my courses through Blackboard	39%	43%	18%
2h	Frequency: Collaborated with classmates through Blackboard chat	30%	35%	35%
2i	Frequency: Attended Student Support Services tutoring	22%	35%	43%
2j	Frequency: Utilized Aleks computerized math program—Student Support Services	26%	26%	48%

Survey 5: Technology Engagement - DMAT 0313 – Spring 2013				
2k	Frequency: Accessed online library database	30%	39%	30%
	Average	**35%**	**33%**	**32%**
		Frequently	**Sometimes**	**Never**
	Active and Collaborative Learning			
3a	Frequency: Completed class assignments using technology integration	52%	35%	13%
3b	Frequency: Completed lab assignments using computerized programs.	48%	30%	22%
3c	Frequency: Used the Internet to access information to complete assignments	61%	30%	9%
3d	Frequency: Worked with other students on projects during class utilizing technology	22%	35%	43%
3e	Frequency: Made a class presentation utilizing technology	36%	27%	37%
3f	Frequency: Worked with classmates outside of class to prepare class assignments utilizing technology	23%	30%	48%
3g	Frequency: Utilized Library database to complete assignment	23%	48%	30%
	Average	**38%**	**34%**	**28%**
			Sometimes	**Frequently Never**
	Student-Faculty Interaction			
4a	Frequency: Used e-mail to communicate with an instructor	29%	42%	29%
4b	Frequency: Used chat to communicate with an instructor	19%	29%	52%
4c	Frequency: Communicated with instructor through Facebook	27%	15%	58%
4d	Frequency: Communicated with an instructor using discussion boards	22%	35%	43%
4e	Frequency: Used Class Connect to communicate with instructor	13%	26%	61%
4f	Frequency: Used Skype to communicate with an instructor	17%	33%	50%
4g	Frequency: Used a blog to communicate with an instructor	17%	26%	57%
	Average	**21%**	**29%**	**50%**
		Frequently	**Sometimes**	**Never**
	Student Effort			
5a	Frequency: Showed up to class prepared to learn	52%	43%	5%
5b	Frequency: Responded when called upon	52%	43%	5%
5c	Frequency: Contributed to class discussions	33%	61%	6%
5d	Frequency: Asked questions in class	29%	63%	8%
5e	Frequency: Engaged in class activities	42%	54%	4%
5f	Frequency: Exerted effort and concentration in learning the tasks	59%	36%	5%
5g	Frequency: Attended class regularly	57%	39%	4%
5h	Frequency: Attended lab regularly	48%	43%	10%
5i	Frequency: Used peer or other tutoring	14%	55%	31%
5j	Frequency: Independent inquiry on material not fully understood	17%	61%	22%
5k	Frequency: Accessed class website for additional			

Survey 5: Technology Engagement - DMAT 0313 – Spring 2013				
	information	22%	50%	28%
5l	Frequency: Collaborated with class members	38%	46%	26%
	Average	**38%**	**49%**	**13%**
		Agree		**Disagree**
	Technology Integration			
6a	Technology plays an important role in my education at Ranger College	64%		36%
6b	Class is more interesting when technology is utilized	68%		32%
6c	Technology helps me engage in class activities more effectively	41%		59%
6d	Technology increases my enjoyment of classes	60%		40%
6e	Attend class more often in classes utilizing technology	65%		35%
	Average	**59%**		**41%**

Survey 6: Faculty Technology Expertise and Usage

1. Rate your proficiency level with classroom content delivery hardware such as Promethean Systems and SmartBoards.					
	I do not currently use these devises	**Beginner**	**Basic/Average**	**Advanced**	**Expert**
Ranger	73%	4%	19%	4%	0%
Erath	47%	0%	20%	33%	0%
Brown	67%	13%	13%	4%	3%
Online	50%	33%	17%	0%	0%

2. Rate your proficiency level with an ITV Tandberg system (interactive television).					
	I do not currently use these devises	Beginner	Basic/Average	Advanced	Expert
Ranger	58%	12%	23%	7%	0%
Erath	60%	7%	33%	0%	0%
Brown	67%	8%	8%	17%	0%
Online	60%	40%	0%	0%	0%

3. What type of technology training, if any, would you like to receive?										
	No desire	**Word**	**Excel**	**PowerPoint**	**ITV**	**SmartBoards**	**You Tube**	**Digital Graphics**	**Polls, clickers**	**Other**
Ranger	2%	6%	8%	15%	11%	20%	14%	12%	12%	Elmo, Blackboard
Erath	0%	0%	5%	9%	23%	23%	18%	4%	18%	Blackboard
Brown	2%	5%	5%	9%	17%	22%	14%	9%	17%	Blackboard Campus Connect
Online	0%	0%	8%	0%	21%	21%	21%	21%	8%	

4. What percentage of your classroom time, on average, is spent on engagement activities with your students (Interactive discussions, computer activities, website explorations, Poll Everywhere, group projects, etc.)					
	0%	**25%**	**50%**	**75%**	**100%**
Ranger	16%	40%	20%	12%	12%
Erath	29%	21%	29%	21%	0%
Brown	17%	36%	30%	17%	0%
Online	0%	0%	20%	0%	80%

5. How would you rate student engagement in your classroom.				
	Students display high levels of interest in learning activities	**Students participate in activities and stay on task**	**Students attention and participation fluctuates**	**Students appear unable or unwilling to participate in activities**

5. How would you rate student engagement in your classroom.				
Ranger	12%	36%	48%	4%
Erath	21%	29%	24%	0%
Brown	20%	38%	42%	0%
Online	17%	50%	33%	0%

Survey 7: Blackboard Use by Faculty in Face-to-Face Classrooms

FACULTY USING BLACKBOARD:

57%	Currently not using Blackboard
16%	Beginner
21%	Basic/Average
2%	Advanced
4%	Expert

PERCENT OF FUNCTIONS USED BY THOSE USING BLACKBOARD

43%	25% of functions
33%	50% of functions
24%	75% of functions

BLACKBOARD TRAINING DESIRED:

18%	No desire to learn Blackboard
41%	Need extensive training
30%	Comfortable but would like to learn more
10%	Little left to learn
2%	No training—mastered Blackboard

WHAT PERCENT OF YOUR CLASS IS LECTURE?
(face-to-face classes only)

0%	0%
14%	25%
32%	50%
43%	75%
11%	100%

Appendix 3: SLOs and Pre/Post Test

MATH 1314 SLOs

1. Axioms and Basic Theorems: Students will be able to identify and apply axioms and basic theorems for the Real and Complex Number system, with appropriate terminology and notation.

2. Rational Numbers: Students will be able to apply standard techniques to simplify and operate with rational expressions and complex fractions.

3. Polynomials: Students will be able to correctly define and perform standard operations on polynomials.

4. Exponentials: Students will be able to apply the governing properties of exponents to simplify and operate on expressions with various exponentials.

5. Solving Equations and Inequalities: Students will be able to find solution sets of various equations and inequalities of the following types: polynomial, rational, exponential, absolute value, radical, logarithmic and system.

6. Graphing Techniques: Students will be able to correctly graph functions or relations of the following types: polynomial, rational, exponential, radical, logarithmic, and conic sections.

7. Applications: Students will be able to select the appropriate solution method for questions in applied mathematics.

College Algebra – Pre-Test/Post-Test

1. Find all possible formula(s) for the linear function *f* if *f*(12) = 4 and *f*(-4) = -8.

   a. $3x - 4y = 20$ b. $y = \frac{3}{4}x - 5$ c. $3x - 4y - 20 = 0$

   d. None of the above e. All of the above

2. Solve the following inequality for *x*: $-11 < 1 - 2x \leq -5$

   a. $x > 7$ b. $6 \leq x < 3$ c. $3 \leq x < 6$

   d. None of the above e. All of the above

3. Find the ordered pair solution that satisfies the system below.

   $20x + 4y = 17$
   $4x + 7y = 22$

a. $(1,3)$ b. $\left(\frac{1}{4},3\right)$ c. $\left(3,\frac{1}{4}\right)$

d. None of the above e. All of the above

4. Perform the indicated operations and write the result in standard Complex Number form (a + bi form):
$(-3 + 5i)(4 - 2i) - 4(7 + i) + 3i$

a. $-26 + 25i$ b. $-40 + 15i$ c. $30 - 25i$

d. None of the above e. All of the above

5. Solve the equation for *x*: $7|3x + 1| + 2 = 16$

a. $x = \frac{1}{3}$ b. $x = -1, 3$ c. $x = -1, \frac{1}{3}$

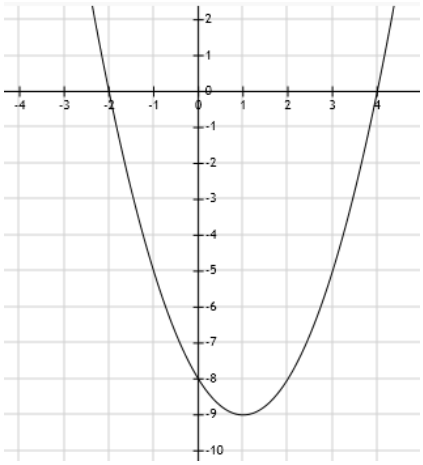
d. None of the above e. All of the above

6. Solve the following equation for *x*: $x^2 - 2x = 5$

a. $x = 1 \pm \sqrt{6}$ b. $x = 1, \sqrt{6}$ c. $x = -1 \pm \sqrt{6}$

d. None of the above e. All of the above

7. Find the quadratic function that satisfies the graph to the right.



a. $f(x) = x^2 + 2x + 8$

b. $f(x) = x^2 - 2x + 4$

c. $f(x) = x^2 - 2x - 8$

d. None of the above

e. All of the above

8. Find the exact value of *x* for equation: $(x^3 - 2)^{\frac{1}{2}} = 5$
Use an inverse function (or inverse operation)

a. $x = 1\frac{3}{4}$ b. $x = 3$ c. $x = 2\frac{1}{2}$

d. None of the above e. All of the above

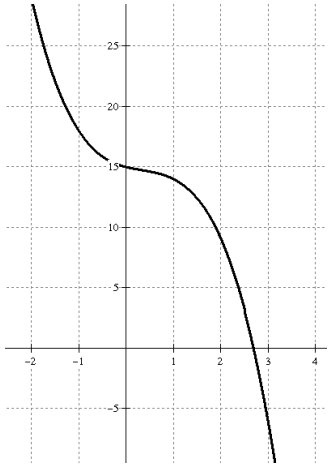
9. Find the exact value of each zero for the function: $f(x) = x^3 + x^2 - x + 15$

a. $x = 1 \pm 2i, -3$ b. $x = -3, 3$ c. $x = 1, 2i$

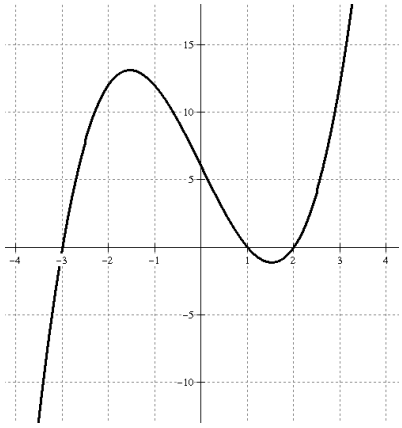
d. None of the above e. All of the above

10. For the function in #9 select the correct graph.

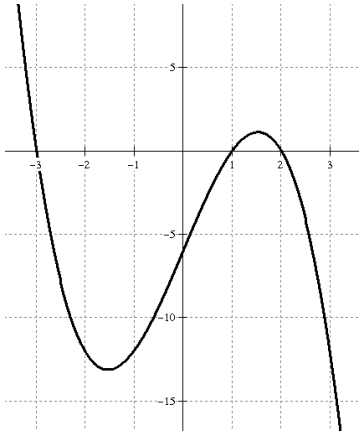
a.



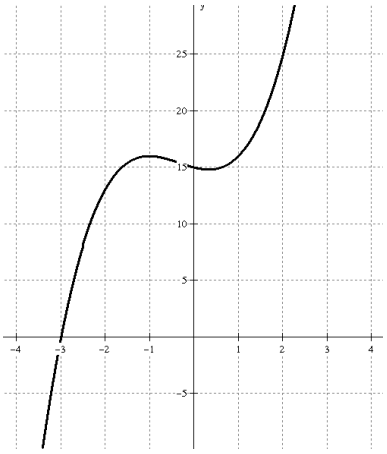
b.



c.



d.



11. Solve the following equation for *x*: $\log_2(x-2) + \log_2 5 = \log_2 100$

a. x = 97 b. x = 103 c. x = 22

d. None of the above e. All of the above

12. Solve the following equation for *x*: $2x^3 + 11x^2 + 2x - 15 = 0$

a. $x = -2, -1, 2$ b. $x = -1, 1.5, 2$ c. $x = -5, -1.5, 1$

d. None of the above e. All of the above

13. Solve the equation for *x*: $\frac{2}{x-2} = \frac{x}{x-2} - 2$

a. $x = 2$ b. $x = -2$ c. No solution

d. None of the above e. All of the above

14. The population in millions of a bacteria culture after *t* hours is given by: $y = 20\ (3)^t$. What is the population after 3 hours?

a. 180 million bacteria b. 540 bacteria c. 540 million bacteria

d. None of the above e. All of the above

15. How long does it take for the population to reach 850 million for the problem in #14?

a. Approximately 1 hour b. Approximately 4 hour c. Approximately 3 hour

d. None of the above e. All of the above

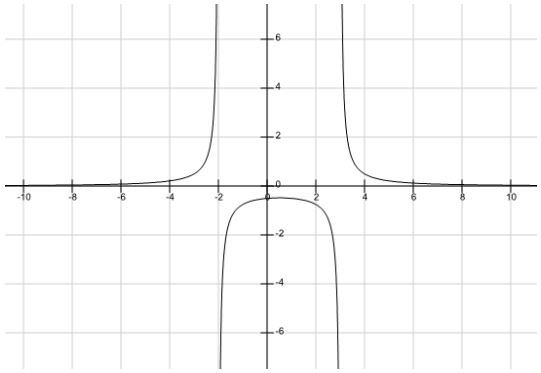
16. Find all asymptotes for the rational function: $h(x) = \frac{3x}{x^2-x-6}$

a. $x = -1, 5; y = 0$ b. $x = -2, 3; y = 0$ c. No Asymptotes

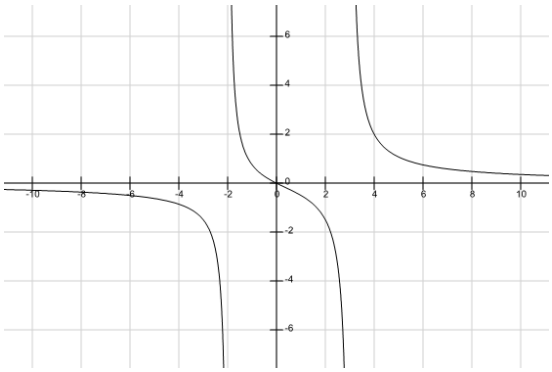
d. None of the above e. All of the above

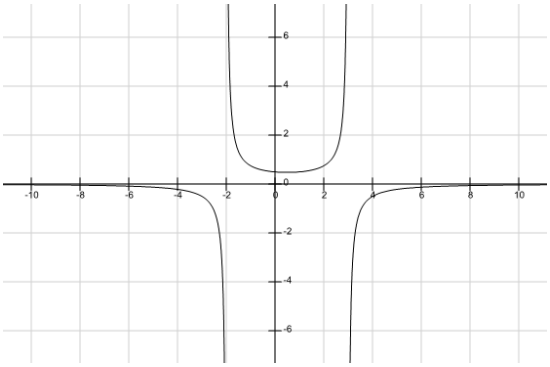
17. For the function in #16 select the correct graph.

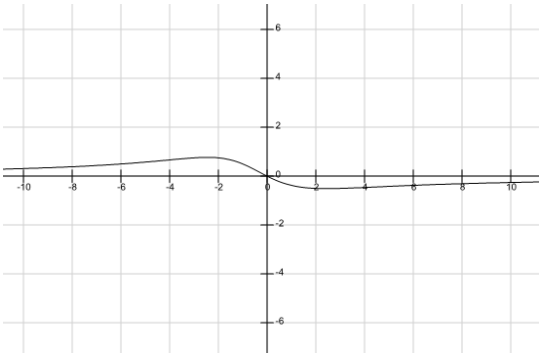
a.



b.



c. 

d. 

18. The size of a town's population in 1998 was 1176 and it has grown by a rate of 2.4% per year since then. Use the function $N(t) = ab^t$ to find the town's population in 2007, where *t* is the number of years since 1998, *a* is the initial population, and *b* is the growth factor.

    a. 1456 people b. 3 million people c. 945 people

    d. None of the above e. All of the above

19. Solve the following equation for *x*: $2 + 3^{2x} = 9$

    a. $x = 2\log\left(\frac{7}{3}\right)$ b. $x = \frac{\log 7}{2\log 3}$ c. $x = \frac{1}{2}\log\left(\frac{7}{3}\right)$

    d. None of the above e. All of the above

20. Given two terms in a geometric sequence, find the 8th term. $a_4 = -12$ & $a_5 = -6$

    a. $\frac{-3}{4}$ b. $\frac{1}{2}$ c. $\frac{-4}{3}$

    d. None of the above e. All of the above

DMAT 0313 SLOs

1. Real Numbers: Students will be able to identify, operate and perform standard operations with real numbers

2. Linear Equations, Inequalities, and Systems: Students will apply appropriate theorems to solve linear equations, inequalities, and systems, and graph linear relations using two or more techniques.

3. Algebraic Expressions and Equations: Students effectively perform standard operations on polynomials and algebraic fractions and manipulate expressions with integer exponents.

4. Quadratic Expressions and Equations: Students will be able to identify and factor special structures and solve quadratic equations through factoring.

5. Word Problems and Applications: Students effectively model verbal information with algebraic equations and inequalities and interpret the solution.

DMAT 0313 – Pre-Test/Post-Test

The Diagnostic Accuplacer is presently being used for developmental pre/post testing. In the future, the QEP may need to change the testing instrument used for developmental math, dependent on the new TSI test adopted by the State of Texas.