



## Creating Success in Developmental Mathematics

### A Quality Enhancement Plan

Submitted to the Southern Association of Colleges and Schools  
Commission on Colleges

By

Southeastern Community College

Whiteville, North Carolina

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## Executive Summary

Southeastern Community College's Quality Enhancement Plan (QEP) "Do the Mathematics: Creating Success in Developmental Mathematics" is a natural outcome of the college's Institutional Effectiveness Plan (IEP) and the planning process. As the Vision/Mission/Goals Council (VMG) reviewed performance data from the previous year related to the college's commitments and the goals and objectives to meet those commitments, it identified the critical issues for the coming year. The council, comprised of all parts of the college community, identified marketing/recruitment/image, developmental education/underprepared students, overall funding issues, and technology as the four issues for the next year.

One of the critical pieces of information considered for the issue of developmental education was the success rate of students in developmental education which averaged 56.3 percent from the 2004 to 2009 academic years. The information was worse for developmental mathematics which averaged 46.3 percent in the 2002 through 2009 academic years. Success rate is the percentage of those who register and complete developmental classes with a grade of A, B, or C.

Based on the data reviewed, the council established goals for each of the four critical issues. For developmental education, including mathematics, the goals were as follows: increase the success rate in developmental courses, increase the success rate in first course taken, and decrease the placement rate in developmental courses.

After the VMG identified the critical issues and goals, the Planning and Budget Council had to turn those issues and goals into measurable objectives for the college's strategic plan. The Budget and Planning Committee, made up of all segments of the college community, gave the task of creating objectives to a sub-committee. In the process of carrying out its responsibility, the committee identified seven areas that it thought needed specific focus by the college and which might be the basis for a QEP. Among the seven areas was the improvement of developmental mathematics.

Those seven areas were given to the QEP Leadership Team for consideration. This broad-based team, having members from all segments of the college, shared the seven topics and related data in forums with faculty and staff, the board of trustees, and the Student Government Association. Based on the input from these forums and from surveys completed by individuals attending, the team identified three finalists for potential QEP topics. The result was the selection of developmental mathematics as the QEP topic.

A broad-based QEP Writing Committee (QEP-WC) was then created to work on developing the QEP. The committee used a four-group sub-committee structure and a reporting-amendment-approval procedure for development of the QEP. All four groups had both faculty and staff members. The first committee to report was the Research/Improvement group who presented information on testing and placement, advising and counseling, redesigned programs and results, professional tutoring, faculty development, and exit surveys.

The Outcomes/Assessments group presented next. After discussion, the QEP-WC modified the four outcomes presented and added a fifth. Based on the research presentation and the outcomes, the QEP-WC then generated strategies to use to accomplish those outcomes. The Capability group later presented a timeline of activities for accomplishing the outcomes of the QEP to the QEP-WC. At another meeting, the Capability group presented the resources needed and a tentative budget for carrying out the QEP over a five-year period. The QEP-WC modified and then approved the activities, timeline, and budget of \$581,014. The final group was responsible for crafting the actual language and developing the initial draft of the QEP document. This document was then shared with the QEP-WC for amendments and revisions twice. The QEP-WC then shared the document with the entire college community for final adjustments.

## **Introduction to the College**

Southeastern Community College (Southeastern) is a public, two-year, comprehensive community college. With its "open-door" policy, the college strives to meet the needs of students with varying backgrounds, resources, interests, abilities, and career goals. The college emphasizes quality in designing and delivering instructional, support, and community services and commits itself to providing students with opportunities to reach their potential.

Southeastern continuously involves all faculty and staff in setting and implementing college goals. All faculty and staff serve in advisory roles wherever their skills are needed. Members of the college community have a commitment to free and open communication based on mutual trust and respect. Also, employees are expected to participate in professional growth experiences.

The college's contiguous 246-acre campus is on the Chadbourn Highway between Whiteville and Chadbourn in southeastern North Carolina. Southeastern is a one-hour drive from the historic cities of Wilmington and Fayetteville as well as the beaches of both North and South Carolina.

In 2009 – 2010, Southeastern served 3,009 college-credit and 7,840 continuing education students with over 25 percent of the adult population service area taking classes at the campus or online. The student population closely mirrors the racial/ethnic make-up of the service area with 58 percent Caucasian, 30 percent Black, 7 percent American Indian, and 5 percent other minority groups.

In addition to working toward one of the 111 college-credit certificates, diplomas, or associates degrees, students may also choose from more than 800 different continuing education courses. Courses are also made available to high school students through the Columbus Career and College Academy, Huskins bill, and Concurrent Enrollment programs.

The mission of the college, most recently amended by the Board of Trustees in November 2010, is as follows:

Founded in 1964 as part of the North Carolina Community College System, Southeastern Community College is a public, comprehensive community college providing individuals in Columbus County with accessible educational, cultural, and social opportunities designed to improve the quality of their lives. Utilizing multiple and alternate methods of instructional delivery, the college provides learning experiences for those preparing for an occupation upon completion, for those in the work force seeking to enhance their knowledge and skills, and for those transferring to a baccalaureate institution. The college offers programs leading to the awarding of continuing education units, certificates, diplomas, and associate degrees.

The college seeks to further serve the community at large by offering basic skills and literacy education for adults, by supporting economic development through services to business and industry, and by providing programs and services that improve the quality of life.

Committed to excellence and dedicated to belief in the dignity, worth, and uniqueness of each individual and the fundamental right of each person to realize his or her fullest potential,

Southeastern Community College encourages student success by maintaining a learning environment that fosters effective communication, freedom of expression, cultural awareness and enrichment, professional and intellectual growth, personal assessment, and decision-making skills.

The college provides a physical and intellectual environment for the faculty, staff, and student body that promotes cultural, ethnic, racial, and gender diversity. Further, the college offers services and supports practices and programs that embody the ideals of an open democratic and global society and which ensure the effective and efficient operation of the college.

To implement its mission, the college goes through a planning process to ensure institutional effectiveness. In fulfilling its mission, “the college provides learning experiences for those preparing for an occupation upon graduation, for those in the work force seeking to enhance their knowledge and skills, and for those transferring to a baccalaureate institution.” Developmental education is one means by which the college ensures students are ready for the programs it offers. The planning process, as part of the overall institutional assessment, identifies areas where the college needs to place more intense effort. One of these areas identified through this process is developmental mathematics. The next section of this document narrates how the Quality Enhancement Plan dealing with developmental mathematics naturally emerged from this process.

## **Development Process for the Quality Enhancement Plan (QEP)**

### **Planning Process – Vision/Mission/Goals Council**

The QEP is one result of the college’s planning process. In October 2010, as part of this process, the Vision/Mission/Goals Council (VMG) reviewed institutional data measures associated with institutional commitments.

This council concentrates on the purpose of the institution by setting planning priorities and refining goals of the institution. The council reviews and monitors effectiveness plans, both institution and unit level, and sets budget priorities. The council has a broad-based membership as follows:

President, Chair; Executive Assistant to the President; Administrative Secretary, Curriculum Instruction; Associate Dean of Continuing Education; Athletic Director; Board of Trustees Member Chosen by Board of Trustees; Community Member Chosen by Board of Trustees; Member Chosen by President; Controller; Coordinator of Basic Skills; Coordinator of EMS/Fire Service Training; Coordinator of Student Activities; Dean of Allied Health, Business & Technology; Director of Nursing; Dean of Arts & Sciences; Director of Research and Assessment; Dean of Students; Director of Continuing Education; Director of Learning Technologies; Evening Operations Coordinator; Director of Financial Aid; Director of Information Technology; Director of Public Safety and Facilities; Director of Upward Bound; Director of Small Business Center; Executive Dean of Institutional Advancement; Faculty Members on Institutional Operations Committee (2); Faculty Members on Educational Development Committee (6); Faculty Members on Planning/Budget Council (4); Faculty Members on Quality of Life Committee (3); Librarian; Recruiter; Curriculum Registrar; Director of Volunteer Services; Staff Member on Institutional

Operations Committee; Staff Member selected by Staff Association; Staff Members on Planning/Budget Council (3); Staff Members on Quality of Life Committee (2); Student on Institutional Operations Committee; Student on Quality of Life Committee; Legacy and CIS System Administrator; Curriculum and Planning Administrator; Vice President of Continuing Education and Economic Development; Vice President of Curriculum Instruction; Vice President of Operations and Finance; Vice President of Student Development and Technology Services.

The institutional commitments are an outgrowth of the mission and are annually reviewed as part of the planning process. Those commitments are as follows:

1. Assist individuals in accomplishing their educational, career, social, and personal goals.
2. Assist individuals in developing basic skills necessary to further their education, obtain employment, or satisfy personal goals.
3. Prepare individuals for college-level studies through successful completion of developmental courses.
4. Prepare individuals through workforce development programs for employment or for upgrading of technical skills.
5. Assist individuals in developing their skills and content knowledge to be successful after transferring to a senior institution.
6. Provide individuals with opportunities for lifelong learning and cultural enrichment.
7. Actively promote economic growth and development.
8. Provide the support needed for the appropriate and orderly operation and growth of the college.
9. Seek external resources needed for the successful development and growth of programs and services.
10. Provide an accessible, attractive, and clean learning environment.
11. Provide a healthy, safe and secure environment for all campus constituents.
12. Provide a campus demographic that reflects the composition of the service area and a climate that recognizes the diverse needs of students, faculty and staff.
13. Promote Southeastern Community College through institutional advancement and through public relations, marketing, and advertising activities.
14. Provide appropriate, efficient, and secure access to technology in support of the college.

*Developed by the SCC Planning Committee, April 2005. Affirmed by the Vision/Mission/Goals Council, March 2007 and Planning/Budget Council, October 2007. Reviewed by the Planning/Budget Council, December 2008. Modification recommended by the Vision/Missions/Goals Council, October 2010. Approved by the Southeastern Community College Board of Trustees, November 2010.*

The VMG reviews data related to the mission and each of its commitments to determine what the institution as a whole needs to focus on in the coming planning cycle. One of the data sets the council reviews is a summary of how well the institution met the benchmarks for each of its commitments. This

summary sheet may be viewed in its entirety in [Appendix A: SACS IEP Institutional Dashboard](#). In its review, the council identified four critical issues as areas to address in 2011. Those critical issues include the following:

1. Marketing/Recruitment/Image
2. Developmental Education/Underprepared Students
3. Overall Funding Issues
4. Technology

In establishing the critical issues, the council looked at pertinent data for each of the major items on the Institutional Dashboard. Of particular interest to the eventual QEP was information on developmental education. The dashboard does the following for developmental education:

- Reviews the pass rate for developmental education with a benchmark of 75 percent or below as low and 80 percent or better as high.
- Reviews the success rate for developmental education with a benchmark of 50 percent or below as low and 55 percent or above as high.
- Reviews the success rate (passing rate) of developmental students in subsequent college-level courses with a benchmark of 80 percent or below as low and a 85 percent or above as high.

Pass rate is defined as the percentage of students completing courses with a grade of A, B, or C. Success rate is defined as the percentage of students who entered courses who completed with a grade of A, B, or C.

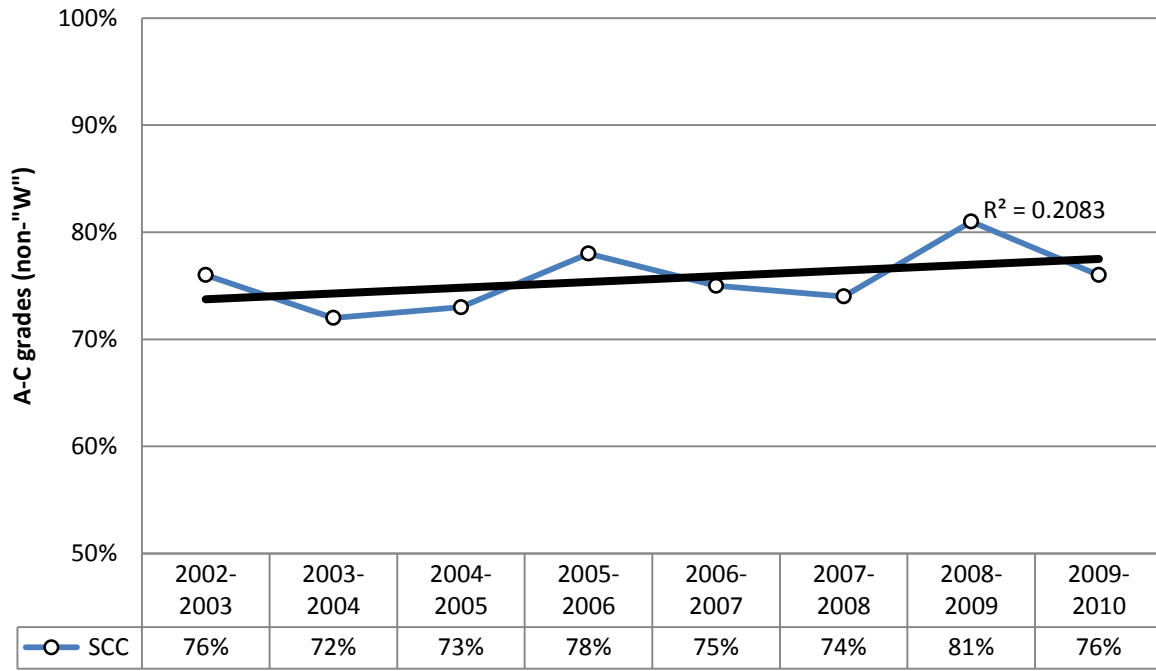
**Table 1** below shows the data for all developmental courses:

Table 1: Developmental Course Summary Data

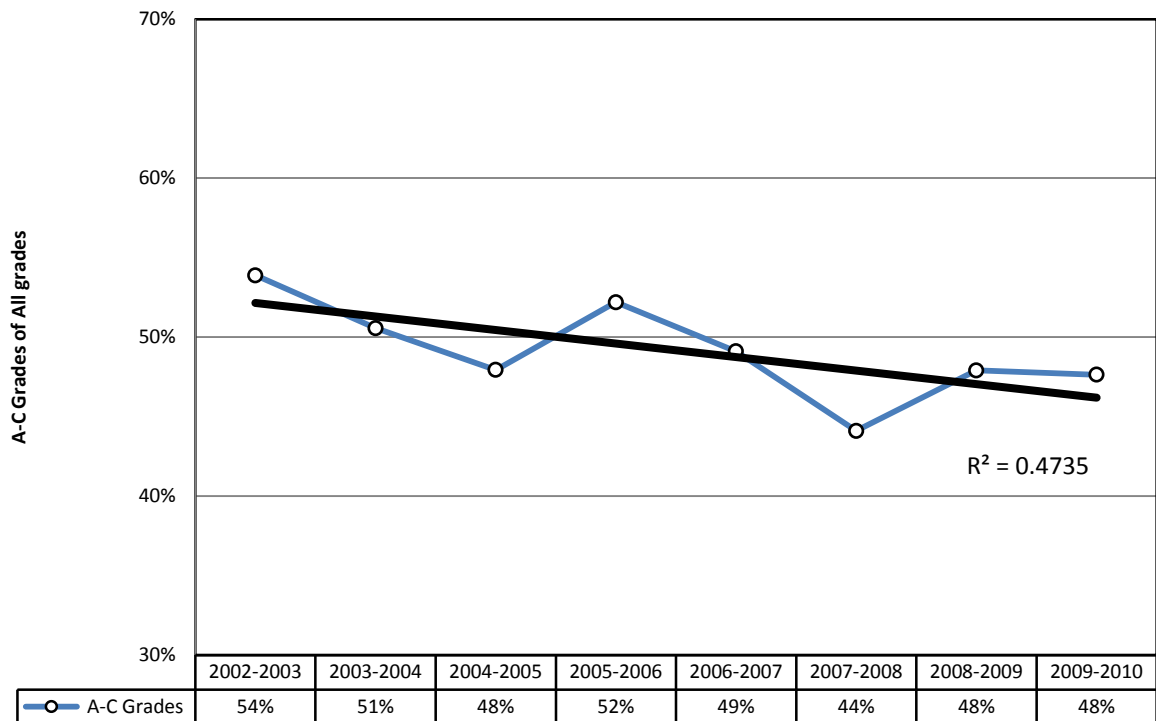
	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
<b>Pass Rate</b>	74%	81%	78%	76%	85%	78%
<b>Success Rate</b>	54%	60%	57%	55%	57%	55%
<b>Success Rate in Subsequent College-Level Course</b>	86%	84%	83%	89%	91%	77%

Overall developmental education appears to be meeting its benchmarks. However, when the council looked at individual data for reading, English, and mathematics, the results were less successful for mathematics. **Tables 2** and **3** below show the data on pass rate and success rate for developmental mathematics. The trend (straight line) is up for pass rate but down for success rate. The pass rate is between 70 and 80 percent for each individual data point and the trend line.

**TABLE 2: Pass Rate in Developmental Mathematics**



**TABLE 3: Success Rate in Developmental Mathematics**



However, the success rate is below 55 percent for each data point and the trend line has a negative slope. No year included shows the college meeting its institutional benchmark for developmental mathematics. The council also reviewed data on specific developmental courses. Relative to the eventual QEP topic is the developmental mathematics data in **Table 4** below.

Based on all data reviewed the council established goals for each of the critical issues in the college's strategic plan (See **Appendix B** for details on developmental education). If the college meets these goals, the council would deem that improvement will have taken place. Of particular importance to the eventual QEP topic are the goals for developmental education:

- Increase success rate in developmental education courses.
- Increase success rate in first courses taken.
- Decreased placement rate in developmental courses.

### **Planning Process – Planning & Budget Council**

Also in Fall Semester 2010, as a result of the work done by the VMG, the Planning & Budget Council began the consideration of how to go about accomplishing the goals. The council reviews and monitors effectiveness plans and sets budget priorities.

The membership of this committee is also broad-based, as follows: Vice President of Operations and Finance, Chair; Vice President of Curriculum Instruction, Vice-Chair; Curriculum, Planning, and Research Information Coordinator; Associate Dean of Continuing Education; Controller; Dean of Allied Health, Business & Technology (2); Director of Nursing Programs; Dean of Arts & Sciences; Director of Research and Assessment; Dean of Students; Director of Information Technology; Executive Dean of Institutional Advancement; Director of Learning Technologies; Director of Public Safety and Facilities; Faculty Members chosen by Allied Health, Business & Technology Division (2); Faculty Member chosen by Arts & Sciences Division; Faculty Member chosen by Faculty Senate; Staff Members chosen by Staff Association (3); Legacy & CIS System Administrator; Vice President of Continuing Education and Economic Development; Vice President of Student Development and Technology Services

As a first step, the committee assigned the task of drafting objectives to meet the goals to the Planning Sub-Committee.

In January 2011, the sub-committee worked to create a draft of the objectives for meeting the goals. During the process, seven objectives emerged as potential topics for the QEP. The planning sub-committee shared these seven areas with the SACS-COC Executive Leadership Team (Leadership Team) for investigation as potential QEP topics.

### **SACS-COC Executive Leadership Team**

The Leadership Team consists of the following: Kathy Matlock, President; Morgan Phillips, SACS Liaison – VP Curriculum Instruction; Betty Jo Ramsey, VP Operations and Finance; Matlynn Yeoman, VP Student Development and Technology Services; Beverlee Nance, VP Continuing Education and Economic Development; Robert Carter, Dean of Arts & Sciences; Susan Houseman, Director of

**Table 4: Developmental Mathematics Grades**

		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010	
<b>MAT060</b>	A	52	13%	64	18%	49	11%	63	13%	58	14%	57	12%	81	17%	68	12%
	B	107	27%	79	22%	99	22%	105	22%	87	21%	99	21%	87	18%	102	18%
	C	71	18%	64	18%	74	17%	80	17%	63	16%	64	14%	94	20%	124	22%
	D	3	1%					1	0%	4	1%						
	F	47	12%	75	21%	66	15%	64	13%	38	9%	50	11%	37	8%	60	11%
	I	5	1%	1	0%	2	0%			16	4%						
	NA											29	6%	9	2%	10	2%
	W	105	27%	82	22%	157	35%	166	35%	140	34%	167	36%	168	35%	205	36%
		390		365		447		479		406		466		476		569	
<b>MAT070</b>	A	63	11%	51	11%	47	10%	49	11%	57	12%	38	9%	63	13%	58	10%
	B	114	20%	81	17%	85	19%	105	23%	90	19%	76	17%	78	16%	101	18%
	C	130	23%	116	24%	115	26%	92	20%	98	20%	99	23%	91	19%	124	22%
	D	2	0%			2	0%	2	0%	1	0%	9	2%				
	F	91	16%	95	20%	73	16%	65	14%	76	16%	86	20%	72	15%	109	19%
	I	7	1%	4	1%	6	1%	1	0%	7	1%						
	NA											12	3%	8	2%	11	2%
	W	150	27%	129	27%	121	27%	142	31%	155	32%	116	27%	161	34%	162	29%
		557		476		449		456		484		436		473		565	
<b>MAT080</b>	A	15	11%	12	7%	24	11%	36	19%	14	7%	19	8%	26	10%	18	7%
	B	30	22%	33	18%	29	13%	31	16%	33	17%	37	16%	35	14%	42	16%
	C	22	16%	41	22%	37	17%	46	24%	48	25%	35	15%	41	16%	59	22%
	D							1	1%	2	1%						
	F	24	17%	30	16%	45	20%	31	16%	21	11%	35	15%	31	12%	40	15%
	I	2	1%	1	1%	2	1%	2	1%	3	2%						
	NA											4	2%	6	2%	1	0%
	W	45	33%	67	36%	83	38%	42	22%	69	36%	99	43%	111	44%	108	40%
		138		184		220		189		190		229		250		268	
	Total	1085		1025		1116		1124		1080		1131		1199		1402	

Research and Assessment; Barbara Capobianco, Curriculum and Planning Administrator; Emily Cook, Early Childhood Education Faculty.

The team reconstructed the seven objectives as potential QEP topics as follows:

### **Potential Quality Enhancement Projects**

1. **Improve Online Instruction** – A significant proportion of curriculum delivery is online, and the amount will increase over time. The college would benefit by examining and implementing ways to improve online instruction. The result should be greater student retention and completion rates.
2. **New Instructional Tools and Techniques** – As our society, culture, and world change, the way we interact with students needs to be adjusted appropriately. The college would benefit by examining and implementing new instructional tools and techniques to increase student success. The result of this project should be greater student retention and completion rates.
3. **Super First Year** – The most challenging time for many students is their first year in college. If they are not successful, they will likely not be able to reach their goals. The college would benefit by examining and implementing processes to ensure a greater number of students are successful in their first term and first year in college. The result of this project should be greater student retention and completion rates.
4. **Seamless Transitions** – The ultimate goal for students at Southeastern Community College is to prepare for a career or to transfer to a four-year institution. Areas where students are required to take unnecessary or duplicative coursework keep them from accomplishing that goal. The college would benefit from better alignment of its programs both internally and externally. Clear pathways among secondary education, continuing education, remedial education, curriculum education, and ultimate transfer should exist for all students. The result of this project should be greater student retention and completion rates.
5. **Improved Developmental Mathematics** – Mathematics coursework is frequently the missing piece for students attempting to complete their educational goals. Students who are successful in developmental mathematics are usually successful in higher-level courses and become completers. But only approximately half of the students registered for developmental mathematics each semester are able to succeed in that term. The college would benefit from reviewing the developmental mathematics curriculum alignment and instructional strategies to improve student success. The result of this project should be greater student retention and completion rates.
6. **Enhanced Internet Connections** – Currently Southeastern Community College delivers a significant proportion of its course content online. The amount of academic assistance provided to students online needs to be increased. The college would benefit from developing additional video support materials, including the ability to provide live, online video assistance for students in its courses. The result of this project should be greater student retention and completion rates.
7. **Early Alert Communications System** – Southeastern advisors and tutors are available to assist students with any difficulties that they might encounter during their coursework and time at college. Regrettably, many students do not seek assistance until their progress for the term has been severely damaged. The college would benefit from developing and implementing an electronic, early alert communications system. This would allow faculty and staff to post a notice that students are having difficulties, resulting in assistance being offered from the appropriate area. The result of this project should be greater student retention and completion rates.

The Leadership Team shared these seven areas with the campus community in multiple forums with faculty and staff, a forum with the Board of Trustees, and a forum with the Student Government Association. These forums were held on the following dates:

- Discussion with the Board of Trustees was January 18, 2011.
- Meeting with Student Government Association was January 27, 2011.
- Forums with faculty and staff were February 9, 10, 11, and 14, 2011.

Surveys on each of the seven topics were completed at the end of the forums for the Board of Trustees and the faculty and staff. The survey asked the respondents to rate their agreement or disagreement on a four-point scale to the following four statements about each topic: (1) A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution. (2) A project in this area would significantly improve student retention and completion rates. (3) The institution should devote significant resources to this project. (4) This project would be appropriate to select for Southeastern's QEP.

Based on the input from these forums, including survey data, by the end of February 2011, the Leadership Team identified three finalists for potential topics: developmental mathematics, online instruction, first-year experience.

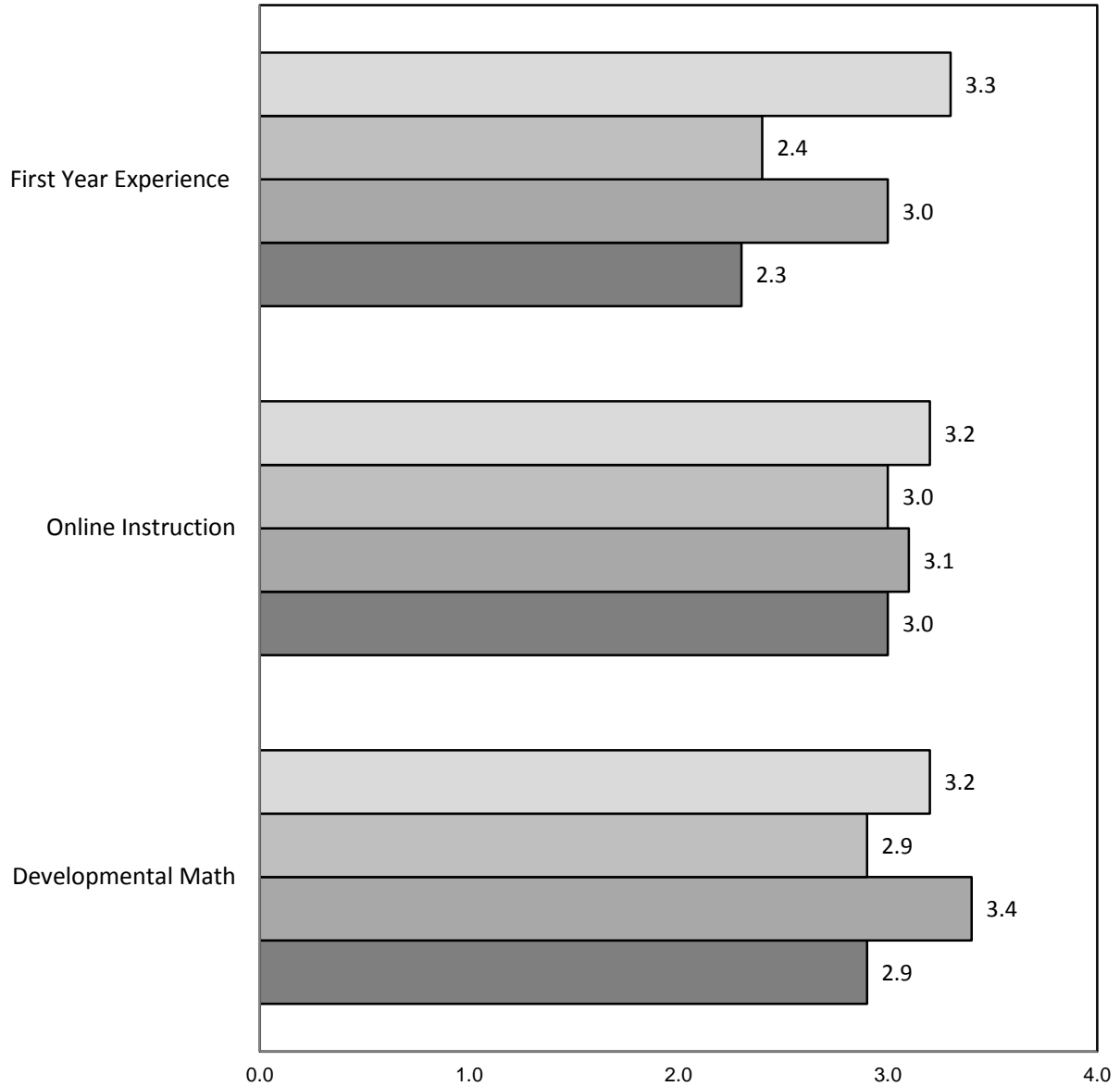
These three topics were the basis of a survey submitted to faculty, staff, students, Student Government Association, and Board of Trustees. They were asked to rank the topic in order of importance. Individual charts for each group appear in [Appendices C1–C3](#). A summary of survey data appears in [Chart 1](#) below.

The leadership team met to review all materials: planning data, the planning process, and survey results. As a result, the team selected developmental mathematics as the focus for the QEP. Coincidentally, a state initiative on developmental mathematics occurred at the same time that developmental mathematics performance became a potential QEP topic. The state initiative was a strong influencing factor on the eventual topic choice.

### **QEP Writing Committee**

The Leadership Team established a QEP Writing Committee (QEP-WC) to oversee QEP development. The membership of the QEP-WC is as follows: Kathy Matlock, President; Morgan Phillips, Vice President of Curriculum Instruction and SACS-COC Liaison; Betty Jo Ramsey, Vice President of Operations and Finance; Matlynn Yeoman, Vice President of Student Development and Technology Services; Beverlee Nance, Vice President of Continuing Education and Economic Development; Sue Hawks, Executive Dean of Institutional Advancement; Robert Carter, Dean of Arts & Sciences; Susan Houseman, Director of Research; Mary Ruth Edwards, Director of Continuing Education; Barbara Capobianco, Curriculum Planning Administrator; Emily Cook, Early Childhood Education Instructor; Teresa Triplett, Associate Dean of Continuing Education; Julia Roberts, College Transfer Counselor; Sharon Williams, Curriculum, Planning, and Research Information Coordinator; Jeff Hester, Facilities Maintenance Instructor; Sandra Nance, Pharmacy Instructor; Betty Gray, Reading Instructor; Darian

**Chart 1: Quality Enhancement Plan Survey -  
SUMMARY Responses**



	Developmental Math	Online Instruction	First Year Experience
□ Student	3.2	3.2	3.3
■ BOT	2.9	3.0	2.4
■ Faculty/Staff	3.4	3.1	3.0
■ SGA	2.9	3.0	2.3

Ransom, Developmental Mathematics Instructor; Karen Stirrett, Biology Instructor; Janie Caswell, Basic Skills Instructor; Beth Ward, Business and Industry Associate; Justin Smith, Communication Specialist.

The QEP-WC developed the following document outlining the procedure for creating the QEP:

Subcommittee One (Document Writing Group)

This group would be responsible for writing the actual document. They would use the input provided by other subcommittees (or the whole QEP committee) for their information. The second section of the QEP is supposed to describe how the institution used broad-based institutional processes to identify key issues which led to the QEP. The information for this part is basically complete and this subcommittee could begin writing this section right away.

Subcommittee Two (Outcomes/Assessments Group)

This group would focus on the data aspects of the QEP. Their primary functions would be to:

1. Identify appropriate measurable outcomes for the QEP.
2. Identify appropriate metrics for process outcomes.
3. Identify appropriate assessment methods.
4. Develop the comprehensive evaluation plan.

This information feeds into Sections 3 and 6 of the report [as outlined in Step 9 below]. Section 3 (Learning Outcomes) would need to be completed quickly. Section 6 (Assessment) would be the last area completed.

Subcommittee Three (Research/Involvement Group)

This group would focus on ensuring broad input in the QEP development. This includes involvement of not only the faculty, staff, students and community/trustees but also the involvement through literature review of experts. This group will have a lot of early work dealing with the literature review and then would serve to ensure we are constantly getting feedback throughout the rest of the process from our stakeholders. This group may make recommendations for the QEP reviewer selected from the national experts.

This information feeds into Section 5 of the report. It will only be able to be completed at the very end since feedback should be occurring all along.

Subcommittee Four (Capability Group)

This group would be responsible for demonstrating Southeastern has the capability of implementing the QEP. It will be necessary for them to recommend the timeline for implementation, how the college will organize to get the work done and any necessary resources for implementation. All these items should be tied to funding commitments. This information is steps 5 through 7 in the process guide and would likely be taking place during May.

This information feeds into Section 4 of the report.

The committee also developed the following procedure for development:

**Step One** - Topic Identification - Complete

**Step Two** - Defining Student Learning Outcomes - Outcomes/Assessments Group to Recommend

Work begins Monday, April. 11, Recommendations complete Thursday, May 5

**Step Three** - Literature Review - Research/Involvement Group to Complete

Work begins Monday, April. 11, Report of Findings Thursday, May 5

**Step Four** - Identification of Actions to Complete in QEP - Entire Committee

Initial version to be completed in extended meeting on Thursday, May 5

Review and adjustment in later meetings of entire committee

Research/Involvement Group begins to collect college feedback after meeting

**Step Five** - Timeline for Implementation - Capability Group

**Step Six** - QEP Organization - Capability Group

**Step Seven** - Necessary Resources - Capability Group

The initial draft of these steps will be completed by the Capabilities Group beginning after the May 5 meeting through the month of May. Their work will be sent to the committee via email for review by June 2. Critical errors will be reported back via email to the group for adjustment by June 9. An adjusted version will be sent to the committee by June 13 and will also be sent to stakeholders for review/comment.

**Step Eight** - Assessment - Outcomes/Assessment Group

As the actions, timeline, organization, etc. are identified, the Outcomes/Assessment Group will determine any appropriate evaluations/assessments. They will present a proposed assessment process for the entire QEP to an extended meeting on Thursday, June 23. After this meeting the content of the QEP should be set (excluding any last-minute stakeholder feedback).

**Step Nine** - Write the QEP - Document Writing Group

The writing group will be able to begin working on Section Two immediately. Work on other sections should be able to begin as follows:

Section 1 - Executive Summary (1 Page) - Completed last

Section 2 - Planning Process - Work to begin April. 11

Section 3 - Outcome Focus - Work to begin May 5

Section 4 - Capability - Work to begin June 13

Section 5 - Broad-based Involvement - Work to begin June 23

Section 6 - Assessment - Work to begin June 23

As group members finish each section of the document, they can email it to the main committee for comment/input. The completed draft of the QEP should be sent to the committee for review by Thursday, July 22. After making adjustments to critical items the working draft of the QEP should be sent to stakeholders for comment on Monday, August 1.

QEP Presentation will be presented at Convocation on Aug. 8 for feedback opportunity.

Deadlines for all feedback are August 15.

The final meeting for the QEP Committee to make any last minute adjustments is Wednesday, August. 17. The committee will make adjustments and send the QEP to SACS-COC and the review team on September 7 with a copy to QEP Writing Committee members.

Broad-based involvement continued with the identification of members of each of the sub-committees:

**Outcomes/Assessment:** Karen Stirrett, Biology Instructor, Chair; Susan Houseman, Director of Research; Connie Porter, Business Instructor; Kim Fine, Nursing Instructor; Betty Gray, Reading Instructor; Teresa Triplett, Associate Dean of Continuing Education; Sandra Nance, Pharmacy Instructor; Matlynn Yeoman, Vice President of Student Development and Technology Services; Michael Cance, Mathematics Instructor; John Robards, Forestry Instructor.

**Research/Involvement:** Kay Houser, Librarian, Chair; Darian Ransom, Developmental Mathematics Instructor; Kay Hester, Mathematics Instructor; Julia Roberts, College Transfer Counselor; Janie Caswell, Basic Skills Instructor; Beth Ward, Business and Industry Associate; Igino Teolis, Agricultural Biotechnology Instructor; Mary Revels, Mathematics Instructor.

**Capability** Betty Jo Ramsey, Vice President of Operations & Finance, Chair; Beverlee Nance, Vice President of Continuing Education and Economic Development; Barbara Capobianco, Curriculum and Planning Administrator; Betty Gray, Developmental Reading Instructor; Kay Hester, Mathematics Instructor; Linda Phillips, Office Assistant II; Jessica Rivenbark, Academic Skills Lab Coordinator; Julia Roberts, Counselor.

**Document:** Robert Carter, Dean of Arts & Sciences, Chair; Justin Smith, Communication Specialist; Emily Cook, Early Childhood Education Instructor; Allison Parker, English Instructor; Paul Van Gilder, History Instructor; Sharon Williams, Curriculum, Planning, and Research Information Coordinator; Barbara Capobianco, Curriculum and Planning Administrator.

The QEP-WC also generated a list of possible short titles for the QEP. Short titles were to capture the essence of the QEP and clearly identify it with mathematics. After a discussion of the titles, the team decided that members should send additional ones to the chair of the Document Group for review by that sub-committee to select the most likely ones. The sub-committee would then ask the college research office to create an online survey listing the top four titles for faculty, staff, and students to indicate their choices from 1 to 4, with 1 being their top choice. As a result of the survey, “Do the Math” was the overall favorite for the short title.

## Research on Improving Developmental Mathematics

The Research/Involvement Group presented a review of the literature on developmental mathematics to the QEP-WC after completion of its research regarding developmental mathematics. The sub-committee reviewed information on ways to improve and redesign the mathematics program to better serve the college's students and improve their success rates. The group report on May 5, 2011, presented its information organized around the following issue areas to be addressed by the college:

- Testing and Placement
- Advising and Counseling
- Redesigned Programs and Results
- Professional Tutoring
- Faculty Development
- Exit Survey

(Note: All internal citation references are located at the end of this section.)

### Testing and Placement

Assessment is a vital component for students during the admission process. Through testing, the college is able to assess students' strengths and weaknesses to determine which mathematics classes they need to register for to best meet their needs. Through an assessment process, the students can test out or not test out of certain levels of courses. Their scores on the assessment tests determine course placement.

Placement testing is "nearly universal in community colleges" (Hughes and Scott-Clayton, 2011, p. 1). The two most widely used exams for assessment and placement are the ACCUPLACER and the COMPASS. According to Hughes and Scott-Clayton, "The ACCUPLACER is used at 62% of community colleges, and the COMPASS is used at 46%" (p. 1). COMPASS and ACCUPLACER appear "to be reasonably valid predictors of students' grades in college-level courses, at least in math when students are expected to earn a B or higher in the target course" (p. 3).

The College Board and ACT developed the placement exams and indicated that "if there are changes in course content, exam content, or incoming student characteristics" (Hughes and Scott-Clayton, 2011, p. 2) then, to ensure test validity, reliability, and interpretation of scores, colleges may want to perform some type of "validation every five to seven years....Placement decisions may work best when multiple measures are used" (p.2).

Although the COMPASS and ACCUPLACER are well-known and widely used by community colleges, there are other assessment measures that may tap into each student's individual needs. By applying additional methods of assessment, the colleges may be able to provide a program that will help the students to succeed not only academically but in other ways. There are cognitive and non-cognitive measures that may need to be considered in order to improve placement accuracy (Hughes and Scott-Clayton, 2011, p. 2).

Hughes and Scott-Clayton state that "Most colleges offer innovative models of developmental education, such as learning communities or accelerated coursework, and multiple measures could be useful in

matching students to particular programs” (p. 3). Additionally, “alternative approaches to assessment may have the potential to improve student outcomes. Using multiple measures for student assessment and placement - including academic, diagnostic, and affective measures - can provide useful information to institutions that could result in course placement and intervention that better meet students’ needs” (p. 3).

Literature research shows a higher dropout rate for students enrolled in online courses (Zavarella and Ignash, 2009). A study analyzed several factors that influenced the chances of students withdrawing from an online versus a traditional developmental mathematics course. These factors centered on learning style, why certain types of instructional delivery were selected by students, and results of test scores during the admission process. The study revealed that students enrolled in classes via the computer were “more likely to withdraw from the course compared to those in the lecture-based format, and personal reasons for choosing a specific format appeared to influence completion rates” (Zavarella and Ignash, 2009, p.2). The literature indicated that by providing useful information to students prior to enrolling in developmental mathematics classes the college would enable the students to make better informed decisions about whether to enroll in an online or a classroom course (Zavarella and Ignash, 2009).

Some colleges use another method of assessment in addition to the placement test. A self- assessment questionnaire is administered to students. Two examples of a self-assessment questionnaire were found on two college websites, Taft College and James Sprunt Community College (James Sprunt, “Self-Assessment Questionnaire,” 2011) and (Taft, “Are You Prepared...,” 2011). The results of questionnaires like these may help determine a student’s readiness for online (distance learning) courses.

The literature research indicated that institutions could help students make better informed decisions about the type of class (computer versus classroom) that would be a better fit for them by providing pertinent information to the students before they enroll in any developmental course. Students may have incorrect assumptions about online courses. The students may think the course requires less effort or time on their part, that the course is easier and that the “computer will help them to understand the material” (Zavarella and Ignash, 2009, p. 2). In one study, “55% of the students withdrew from the computer-based sections...because the mode of instruction” was more challenging than they anticipated. Another challenge for students enrolled in online courses was the “lack of available tutorial services” (p. 8).

Zavarella and Ignash (2009) state that “Students need to be aware of the particular demands of online and Web-enhanced learning delivery systems” (p.10). They further indicate that “colleges might consider an informational website that students are required to access prior to enrolling in computer-based courses which outlines expectations for and characteristics of successful students” (p. 10). A distance education program needs to have the resources in place to “meet the special needs and challenges associated with computer-based instruction and teaching at a distance” (p. 10). Students’ success and retention rates improve when they use tutorial services. The research also suggested that “institutions might consider implementing mandatory or optional online tutoring for students enrolled in hybrid or distance courses” (p.11-12).

### **Advising and Counseling**

Small group and individual counseling sessions could be conducted to help students overcome mathematics anxiety and improve their time management and study skills. According to Legg and Locker (2009), “Given that math anxiety can hinder performance even for individuals with high aptitude, it’s

important to investigate under what circumstances certain mechanisms are involved in the intrusion of anxiety in performance” (p. 3).

A sample of Queen Mary College freshmen on academic warning or academic probation participated in a study to identify factors related to their underachievement. Upon completion of interviews, these major themes emerged: (a) lack of good time management skills, (b) inadequate study skills, (c) lack of self-discipline and motivation, and (d) lack of preparation (Balduf, 2009, p. 284).

Le, Rogers, and Santos (2011) focused on three community colleges and the methods they put in place to improve student performance in developmental mathematics. The colleges are as follows:

- Florence-Darlington Technical College in South Carolina (Florence-Darlington)
- Delaware County Community College in Pennsylvania (Delaware County)
- Chaffey College in California (Chaffey)

Florence-Darlington offered more individual assistance to their students from instructors and tutors when they were working in the labs. The extra support also helped the students with their time management and other skills. Chaffey College developed “Success Centers to improve study, testing, and other support services for students on probation or on the verge of dismissal from the college” (Le et. al., 2011, p. 9). Delaware College created Jump Start Math which offered a “nine-day review of arithmetic” along with an “introduction to college support services” (p. 7). Upon completion of Jump Start Math, the students had the option of retaking the college placement test. If the students passed the placement test, they moved on to the next mathematics level (Le et. al., 2011).

The implementation of an early alert system could also help students with their grades and retention. Le, et. al. (2011) state that “Guidance counselors use a computerized early alert program to identify and notify students who are experiencing academic difficulty, and they then make recommendations for improvement” (p. 9). The Starfish EARLY ALERT website offers a program for tracking students looking at their performance and assignment tardiness. It enables instructors and advisors “to know which students need support” (Starfish Solutions, 2011).

### **Redesigned Programs and Results**

Florence-Darlington developed a hybrid program where traditional lecture and technology are incorporated: “The students attend two hours of lecture per week and spend three hours together in the Mathematics and Technology Hub, a new facility with seventy-five computer workstations” (Le, et al., 2011, p. 5). The program uses a combination of self-paced and guided instruction, online assignments, assessments, and individual communication between faculty and students. The assessment portion identifies students’ strengths and weaknesses. Software is available so students can practice and work on their weak mathematics skills. During their lab time, tutors and instructors are available for individual assistance. This program not only allows students to have some input into their mathemetics pace but it also helps the students with their time management skills (Le, et. al., 2011). Le, et al.(2011) further report that “After three and a half years with the HUB program...., the college calculated that the pass rate of students in hybrid courses was 41% higher than that of students in traditional classrooms” (p. 6).

The program at Florence-Darlington allows students to advance much quicker in developmental courses. Le, et al. (2011) remark that “of Hub students taking developmental coursework, approximately 20%

complete a second course in a semester. Florence-Darlington's Math Hub has created a foundation on which a developmental math best practice, incorporating technology in the design, can alter the pedagogical approaches at community colleges around the country" (p. 7).

Delaware County initiated a program called Jump Start Math. This program, as mentioned previously under the advising and counseling part of this report, covers a review of basic arithmetic along with the assistance of support services. The students also have the opportunity to retake the placement test to determine if they can advance to the next mathematics level (Le, et al, 2011). In 2009, Delaware County reported that "74% of students enrolled in the Mandatory Supplemental Instruction pilot passed the course compared to 64% of students in the other sections. In the two summer 2009 pilot sections of Jump Start Math, 100% of the students completed the review, and all of those with the prerequisite skills placed into introductory algebra and higher"( p. 7).

Chaffey developed a pilot program called Opening Doors (OD) in 2005 (Le, et al., 2011, p. 9). The Success Centers were part of this pilot program, which included the various support systems, student services, basic skills, and instructional departments, to help students who were on academic probation. The Success Centers focused on certain subjects and offered counselor apprentices who provided individual mentoring and tutoring in addition to working with groups. Students who participate "must visit the centers at least six times in their first semester in the program, once for an orientation during the first week of classes, with subsequent visits during pre-scheduled time periods over the course of the semester. In the second term of OD, "students enroll in Opening Doors to Student Effectiveness, a course focused on empowering them to become active, responsible learners" (p. 9). Chaffey has seen a decrease in the number of students dismissed from 5% to 3% " (Le, et al, 2011).

One college redesigned its developmental mathematics program because they realized some of the problems the students were experiencing with the college's current program. The student retention rate was low because students were not doing some combination of the following: attending classes, doing their homework, participating in class, failing, retaining or comprehending key concepts. The college's solution was to redesign the course with a new method for teaching developmental mathematics and incorporate that with online systems. The new system utilized instructional-based software and eliminated class meetings. The students were allowed to work on a unit and master that one unit before advancing to the next unit. This was a module approach (emporium model). The students could work at their own pace within guidelines, receive weekly points for participation, attend Math Labs, retake exams, receive individual assistance/instruction, complete nine computer-based modules per course, receive more timely feedback, and complete more than one course per semester. After the program was put in place, the college saw an increase in students' attendance, completion of assignments, and interest in the course (McIntosh, 2010).

Bossier Parish Community College incorporated lecture-based, hybrid, and computer-based emporium models to accommodate a variety of learning styles. Instructors worked with students in classrooms using one-on-one instruction and small group instruction. Students worked at their own pace with computerized interactive software to complete homework and assessments. If students finished one mathematics course, they were allowed to advance to the second mathematics level during a semester. The lecture-style teaching method uses My Math Lab for supplemental instruction and consists of a sixteen week term that meets six hours per week. Once students complete the first eight weeks and master

the first mathematics level, they advance to the next mathematics level for the last eight weeks of the semester (Bossier Parish, 2011).

The National Center for Academic Transformation (NCAT) awarded six grants to Tennessee educational institutions to redesign their mathematics programs. Five of those grants were awarded to community colleges. As a result of these grants, “NCAT reported that redesigns at four schools improved course completion rates and school retention rates while reducing costs. Financial savings at the community colleges ranged from 19% to 51%” (Mills, 2010, p.52).

Cleveland State Community College’s redesigned program allowed students to work at their own pace with the use of technology to focus on the skills they needed for individual courses. The results were as follows: “The completion rate for elementary algebra was 50% before the redesign, 68% afterward. The intermediate algebra completion rate increased from 57% to 74%. The overall retention rate increase by 7%” (Mills, 2010, p.51). Cleveland reorganized the mathematics program by using mini-modules. Courses contain “10 to 12 modules ... [and] “students are expected to complete at least one module each week” (Squires, et. al., 2009, p. 884). The results are as follows: “With student engagement and learning both increasing, course completion rates in the developmental studies courses have skyrocketed, going from 54% before the redesign to a 72% success rate afterwards” (Squires, et. al., 2009, p. 885).

The redesigned program at Jackson State Community College is SMART Math, an acronym for Survive, Master, Achieve, Review, and Transfer (Mills, 2010, p. 54). To develop its program, Jackson State polled its mathematics faculty to determine the competencies needed for courses. The process allowed the college to make a decision about the number of modules to have in each of the redesigned courses. Once the college had a list of mathematics competencies, the college took the list to the various departments on campus to see “which skills students absolutely needed to complete their classes” (p. 54). Data indicate that “students increased their average post-test scores in all courses by fifteen points according to the math department” (p.55). After implementation of the new program, the passing rate for developmental math courses increased by 45 percent. Additionally, “the SMART Math program reduced the cost per student by 20%” (p.55). In fact, Jackson State’s redesigned developmental mathematics program increased the success rate from 41percent to 54 percent after implementing the modular approach (Twigg, n.d.).

### **Professional Tutoring**

Gallard, Albritton, and Morgan (2010) looked at the benefits of tutoring. They discovered that students who received tutoring from the Academic Success Center had higher course pass rates and re-enrollment rates than students who did not receive tutoring. From a total of 155 students who received tutoring, a 78.1percent pass rate was reported for students enrolled in developmental courses with a re-enrollment rate of 55percent for the following semester. The students who did not receive tutoring had only a 62.6 percent pass rate with only 30.3 percent enrolling for the following semester (Table 1, p. 12).

Seminole State College in Florida received a Title III grant to “improve the rates of retention and transition for developmental education students” (Gallard, et. al., 2010, p. 16). Seminole’s approach was to create an Academic Success Center “which invested in the quality of its tutoring services by employing degreed and experienced tutors” (p. 16). After analyzing the program, Seminole reported “increases in

developmental education course completion rates of 15.5 %, with a return on investment to the college of 272%” (p. 16).

Florence-Darlington implemented hybrid courses with two hours of lecture and three hours in the computer lab where instructors and tutors provided one-on-one assistance to each student. After several years with the Hub program, the students had a 41 percent higher passing rate than students in traditional classroom settings. The new program, which incorporated individual assistance from faculty and tutors, surpassed Florence-Darlington’s goal of 5 percent (Le, et al, 2011, p. 6).

### **Faculty Development**

From several redesigned programs, colleges realized the need for faculty development in which the faculty focused on coordinating “the efforts of all course instructors” in the redesign effort to ensure uniform instruction (Twigg, n.d., p. 7). College faculty have the task and responsibility to assist new and returning students through course selection and choices. Advisors and faculty need to be trained and aware of students’ abilities in order to teach and advise students so their students can succeed not only in their courses but also in the program of their choice (Hollis, 2009, p. 3). To better prepare developmental faculty instructors, H.R. Boylan indicated the importance of support for professional development, faculty participation in professional associations, and the “regular systematic sharing of instructional strategies among developmental instructors” (Archie, as cited in Wayne Community College QEP, 2006, p. 31).

### **Exit Survey**

Conducting exit surveys or focus groups with students who have withdrawn could help “to gain a better understanding of their perceptions of computer-based instruction as well as their reasons for withdrawal from a course in order to gain a deeper understanding of retention in general and particularly in computer-based instruction”(Zavarella and Ignash, 2009, p. 2). Research indicates that “institutions should increase the communication between themselves and their students to gain a better understanding of their issues and concerns” (p.12). Zavarella and Ignash also reported that “far less research has investigated the effectiveness of computer-based instruction specifically for students in developmental education” (p. 2).

### **References**

Archie, Cindy. (2006). *The Quest for Success: Slaying the Developmental Math Dragon*. Goldsboro, NC: Wayne Community College.

The publication is the quality enhancement plan for Wayne Community College, dated February 10, 2006. One of the areas focuses on faculty development and the importance of training faculty who teach developmental mathematics classes. In addition, it is recommended that the faculty join professional associations, share their strategies with other developmental instructors, and receive support and opportunities for professional development.

Balduf, M. (2009). Underachievement among college students. *Journal of Advanced Academics*, 20, 274-294.

In this study a sample of college students, who were classified as underachievers, were interviewed to examine the causes of underachievement and possible solutions to remedy the situation.

Underachievement was attributed to three major factors. One was a lack of preparation for college. High school did not seem to challenge the students enough such that when the students were enrolled in college, they did not have the study or note-taking skills required to do well. A second factor involved problems with time management. Students were unaccustomed with the extra time during the day when they were not in class, and some did not use this time wisely. Students often waited until shortly before the exams to study. A third factor involved issues with self-discipline and motivation. Since students often did not have to work very hard to earn good grades in high school, they did not understand just how much they had to earn their grades in college.

The students in the study felt that the best solution to the problem of underachievement was to improve their attitudes and behaviors. Study skills courses can be offered to underachieving students, and incoming freshmen can learn preemptive strategies.

Bossier Parrish Community College (2011). Mathematics.

<http://www.bpcc.edu/bulletin/spring/mathematics.html> (Accessed 5/3/2011)

Bossier Parish Community College's site briefly describes their developmental mathematics approaches, which includes computer-based, hybrid, and lecture methods. Included on the site is a list of criteria or qualities students need to consider if they are interested in taking a computer-based developmental mathematics class.

Gallard, A. J., Albritton, F., Morgan, M. (2010). A comprehensive cost/benefit model: Developmental student success impact. *Journal of Developmental Education* 34 (1), 10-25.

In this study, based at a community college in Sanford, Florida, the authors used a cost/benefit model to determine the return on an investment in the form of an intervention in the developmental education program. The intervention consisted of increased pay and qualifications of the tutors who worked in their Academic Success Center, purchase of computer materials to track students, and faculty workshops covering instructional strategies and student performance.

Results showed that students receiving tutoring had a 15.5% greater pass rate in the developmental education course compared to students who did not receive tutoring. Taking into consideration the total benefits to the institution from the estimated increase in students reaching milestones among those receiving the enhanced tutoring, the authors calculated a 272% return on investment. The benefits to society in the form of better health, reduced crime and social cost, greater productivity and additional earnings was even greater, with a 2104% return on investment. The authors concluded that early successful intervention in college developmental education is beneficial to students, the institution, and society.

Hollis, L. P. (2009). Academic advising in the wonderland of college for developmental students. *College Student Journal* 43 (1), 31-35.

This article gives some suggestions for advisors of developmental students. Many of these students do not have academic role models, have a high school background that did not adequately prepare them for college, come from a low socioeconomic status, and lack metacognitive skills.

Academic advisors should let their students know that they are not alone. Role models from around campus can be pointed out to let the students know about others who have started with developmental courses and succeeded. The advisor must be supportive and create a safe environment for the student and guide the student through any setbacks. Realistic advisement can be given by taking the time to analyze the student's academic ability. The advisor can make connections across campus and make referrals to tutorial and counseling services, for example, and be part of an early alert system for the student. An understanding of the student's chaotic world and fear can help the advisor develop the patience and other skills required to deal with this population.

Hughes, K. L., Scott-Clayton, J. (2011). Assessing developmental assessment in community colleges. *Community College Research Center, Brief Number 50*.

In this brief, the authors examine the role of assessment, the effectiveness of some common placement exams, and some potential alternatives to the common modes of assessment.

The authors state that more research should be conducted to evaluate the effectiveness of multiple measures for academic placement, as opposed to using only the results of standardized tests. These multiple measures can include academic, diagnostic (revealing the student's strengths and weaknesses), and affective (non-cognitive) measures. The authors conclude that although assessment reform is just one aspect of reforming developmental education, it is definitely needed to improve retention and graduation rates.

James Sprunt Community College (2011). Self-assessment questionnaire. [http://www.jamessprunt.edu/DL\\_Self\\_Assessment.html](http://www.jamessprunt.edu/DL_Self_Assessment.html) (Accessed 4/28/2011)

This site provides a self-assessment questionnaire for students so James Sprunt can determine if the students are ready to take an online class.

Le, C., Rogers, K.R., et al. (2011) Innovations in developmental math: Community colleges enhance support for nontraditional students. Retrieved from <http://www.jff.org/sites/default/files/MetLife-DevMath-040711.pdf>

Florence-Darlington Community College has developmental mathematics courses where students spend two hours per week in lecture and three hours per week in a computer lab and where the teacher and tutors provide one-on-one help. Students use software that guides them into practicing skills where they are weak.

Darlington County Community College has a nine-day program for its lowest-level students where they review arithmetic and learn about college support services. Students entering Introductory Algebra are required to participate in a program that provides two additional hours of instruction facilitated by peers.

Legg, A. M., Locker Jr., L. (2009). Math performance and its relationship to math anxiety and metacognition. *North American Journal of Psychology 11* (3), 471-485.

In an experiment involving 56 university undergraduate students, the authors noted that metacognitive skills moderate mathematics anxiety in that, among students with high mathematics

anxiety, those with better metacognitive strategies achieved higher scores in mathematics exercises than those with poor metacognitive skills. The authors suggest that metacognitive training (checking behaviors, strategic problem solving, etc.) may help students perform well, and be useful in overcoming the prevalence of mathematics anxiety and avoidance in Western cultures.

McIntosh, J. *It's outta here! Hitting a homerun with a lab approach to developmental mathematics* [PDF document]. Retrieved from <http://web.susla.edu/administration/Documents/PAR/SACSCOC/2010/cs-84%20James-McIntosh-SACS%20Presentation.pdf>.

Faculty and staff at NW-SCC redesigned their developmental mathematics program to increase student learning. The new program employed the Emporium Model which replaced class lectures with a learning resource center that provided online materials as well as on-demand personalized assistance. Each course was made up of nine computerized modules in a sequence, such that students had to master a module before starting the next module in the sequence. A suggested pacing guide was given to the students to help complete the course. The new format resulted in less prep time required and no grading by faculty who were able to better assist student learning and monitor student progress. Students were able to work at their own pace, were given immediate feedback, received individual instruction, and had multiple opportunities for success. Attendance increased and the students were more engaged in their learning. Learning outcomes increased by 3.9% in elementary algebra and 5.6% in intermediate algebra for students. Problems encountered included faculty's acceptance of their new role, resistance to retesting, and student acceptance of lab instruction.

Mills, K. (2010). Redesigning the basics: Tennessee's community colleges use technology to change their approach to developmental reading and math. *Education Digest* 76, 2.

Cleveland State Community College redesigned their mathematics program by incorporating technology to focus on the skills needed for college-level courses and allowing the students to work at their own pace. As a result, the completion rate increased from 50% to 68% for elementary algebra and from 57% to 74% for intermediate algebra, while the overall retention rate rose by 7%. In addition enrollment in college-level mathematics courses increased from about 400 students per semester to 500 to 600 students. Consequently, eight college-level courses were redesigned as well.

At Jackson State Community College, the mathematics courses were redesigned into a modular approach. Students had to only master those mathematics competencies that were necessary to succeed in their chosen careers. The redesign increased the passing rate in the developmental mathematics courses by 45%. In addition, the cost per student in the mathematics program was reduced by 20% using a number of strategies, such as allowing students to complete the work more quickly, using tutors instead of faculty, and reducing the number of sections that were taught by full-time faculty.

Squires, J., Faulkner, J., Hite, C. (2009). Do the math: Course redesign's impact on learning and scheduling. *Community College Journal of Research and Practice* 33, 883-886.

In 2008, Cleveland State Community College's mathematics department embarked on a project to redesign three developmental mathematics courses along with three college level mathematics courses. Using the emporium model of instruction, each of the courses were delivered online and consisted of 10 to 12 modules. Each module consisted of brief instructional videos, homework, and a quiz. Students met two hours a week in a computer lab and one hour a week in class where they also had access to computers, thus keeping the students on task and eliminating down time.

With the redesign, completion rates in the developmental courses increased from 54% to 72%. In addition, the department used a continuous enrollment plan, where students could enroll in another mathematics course after completing the previous course within the same semester. As a result, 46 students were able to complete multiple courses in the fall of 2008. The department also adopted the one-room schoolhouse strategy, where low enrollment courses were combined into one class, with instructors present to help students and monitor their progress. With the redesign and strategies implemented, the department was able to reduce their costs by 10%.

Starfish Solutions (2011). Early alert. <http://www.starfishsolutions.com/sf/solutions/earlyalert.html>  
(Accessed 5/4/2011)

Starfish is an early alert system program that tracks a student's performance and can help colleges identify students who need help based on their grades, assignments, and other factors established by the college. The system can identify at-risk students so colleges can take other measures to help students succeed.

Taft College (2011). Are you prepared...? [http://www.taftcollege.edu/de/self\\_assess.htm](http://www.taftcollege.edu/de/self_assess.htm) (Accessed 4/28/2011)

This site provides a self-assessment questionnaire for students at Taft College to take to see if they are ready to take an online (distance learning class). Students select "yes" or "no" for each of the statements. Once completed, their responses are "self-scored" so the students can see if they are prepared for distance learning classes.

Twigg, C. A. Developmental courses: An oxymoron? [PDF document]. Retrieved from <http://www.thencat.org/NCATPlans/Developmental%20Courses--An%20Oxymoron.pdf>.

This article details the changes that were planned at six educational institutions in Tennessee that received funding to redesign their remedial and/or developmental courses. The goal of the redesign was to come up with a more efficient assessment and delivery system to increase completion rates, reduce the time that students spend in these courses, and reduce the financial burden placed on the students as a result of enrolling in these courses. Each of the institutions was required to modularize their courses. Students would be able to work at their own pace and possibly save time and money by enrolling only in those modules that would address their deficiencies. The article does not give any results to indicate whether the changes resulted in increased completion rates.

Cleveland State Community College plans to adopt the Emporium Model, where each course is divided into 10 to 12 modules and students meet in computer labs. Austin Peay State University decided to eliminate developmental courses and replace them with supplemental academic support

for students enrolled in the core mathematics course to address their deficiencies at strategic times during the core mathematics course. Jackson State Community College plans to replace the three developmental mathematics courses with a single course of nine modules, but students would only be required to master those concepts they are deficient in and which are deemed as necessary for their career goals.

Twigg, C. A. Increasing success in developmental math: SMART Math at Jackson State Community College. Retrieved from <http://www.thencat.org/SMART%20Math%20at%20JSCC.pdf>

Students learned significantly more when placed in redesigned mathematics courses. The redesign involved replacing courses with modules, changing developmental mathematics requirements throughout the college, using a computer lab with on-demand assistance, and emphasizing mastery learning, where students needed to show 80% mastery on a homework assignment before moving on to the next.

Zavarella, C. A., Ignash, J. M. (2009). Instructional delivery in developmental mathematics: Impact on retention. *Journal of Developmental Education* 32 (5), 2-13.

The authors conducted a study which revealed that students were more likely to drop a developmental mathematics class if it was offered in a computer-based format than if it was lecture-based. The withdrawal rate was 20% for the lecture format compared to 42% for the hybrid format and 39% for the distance learning format. Most students in the computer-based format that dropped the course did so because the course was more challenging than they had expected.

The authors recommended that there be an increase in the communication between the institution and the student. Students need to be knowledgeable of the challenges of online instruction. An informational Web site may be set up by the institution that outlines the expectations of students enrolled in such courses prior to registration. Exit surveys or focus groups with students who have withdrawn could be conducted to gain a better understanding of retention. The institution can stress the importance of using tutoring services to supplement the online instruction, as these resources were not taken advantage of by students in this study.

## QEP Outcomes/Assessments

Based on the process for QEP development established by the QEP Writing Committee (QEP-WC) discussed above, the various subcommittees began their work.

The Outcomes/Assessments subcommittee work began April 11, 2011 with instructions to present a report on the proposed outcomes at the QEP-WC's May 5, 2011 meeting.

### Outcomes

This subcommittee presented the following proposed outcomes based on the topic statement developed by the SACS-COC Leadership Team as follows:

Improved Developmental Mathematics – Mathematics coursework is frequently the missing piece for students attempting to complete their educational goals. Students that are successful in developmental mathematics are usually successful in higher level courses and become completers. But only approximately half of the students registered for developmental mathematics each semester are able to succeed in that term. The college would benefit from reviewing the developmental mathematics curriculum, alignment, and instructional strategies to improve student success. The result of this project should be greater student retention and completion rates.

Although several members of the group were on the QEP-WC, the entire group reviewed most of the materials leading to the selection of the QEP topic, including, but not limited to, the following:

- Vision/Mission/Goals Council – Planning Assumptions for 2010-2011
- 2.12 from the SACS Compliance Documentation
- QEP Handbook – March 4, 2008
- Haywood Community College – mathematics QEP example
- General Education Outcomes Assessments 2009-2010 vs. Fall 2010
- NCCCS Critical Success Factors
  - passing rates in developmental mathematics
  - passing rates of developmental students in subsequent courses
- Grades of “F” and “W” in Developmental mathematics – trends 2002-2003 to 2009-2010: NCCCS completion rates of all colleges: developmental mathematics and subsequent mathematics courses.

During its review and discussion, the group discussed the following topics as information important to the development of outcomes:

- Syllabi must contain specific and clear student learning outcomes.
- Developmental mathematics instruction is moving to modules in the NCCCS.
- Mathematics anxiety across the curriculum has potential effect on outcomes.
- Placement testing needs to be accurate, fair, and appropriate.
- Placement testing may be changing.
- Tests need to be segmented and matched to MAT 60, 70, 80.
- Moving faster through developmental education makes for a good experience leading to more likely completion of program.
- Computer-based testing/teaching is used at some colleges with proctored labs and multiple instructors.

- Inverting the lab/lecture balance may lead to more individualized instruction.
- Networking with other colleges would provide a level of collaboration.
- Pharmacy students need mathematics weaknesses identified before entry into program.
- Word problems are problems.
- Some students are only missing a few skills.
- Disheartened students do not finish the classes/program.
- Students not coping with mathematics within their programs leads to poor outcomes.
- Test anxiety combines with mathematics anxiety for poor outcomes.
- Student funds can run out while students are trying to make it through the mathematics sequence.
- There is evidence of program switching to avoid mathematics.
- Non-conventional students may need brush up to even sit for placement.
- Mathematics as prerequisite for program courses can delay graduation.
- Finishing developmental education sequence is related to how fast student moves through the sequence.
- Mathematics needs to be in the programs, not just in the developmental education courses.
- Students in a many developmental education courses only get a taste of the program they came for.
- Continuing Education may use CRC to support Basic Skills students who are preparing for GED tests with good results.
- Mathematics anxiety borders on mathematics phobia.
- Mathematics anxiety may differ by gender.
- One of the first things in admissions counseling should be to take a placement test.
- Placement tests are sometimes not taken seriously.
- Some students walk out of placement tests.
- Recession job loss is affecting male industrial job holders more than female.
- Personal budgeting is a mathematics related issue – students do not cope well.
- Problems are caused by students not understanding financial aid packages and repayment because of mathematics difficulties.
- Failure to achieve 67 percent pass rate on courses and 2.0 GPA for Pell Grant because of failing developmental education leads to dropouts.
- Students drop out of school when financial aid runs out. Developmental education is not even completed.
- Students are given W grade involuntarily from developmental education courses in face of anticipated F grades may be a problem.
- The number of times students take developmental courses before passing may be a problem.

As a result of this discussion and subsequent meeting, the group presented the following four outcomes to the QEP-WC for consideration:

1. Students who complete the developmental mathematics sequence will demonstrate confidence in pursuing the college-level mathematics and mathematics-related courses required for their program of study.
2. Improve the success rate of students in developmental mathematics by 5 percent.
3. Students will progress through their developmental mathematics sequence within one year of entry into their first developmental mathematics course,
4. Students who complete the developmental mathematics sequence will be able to apply mathematics to real-world situations.

After discussion, the QEP-WC modified the above and added a fifth outcome. The revisions are as follows:

1. Students will begin taking any required developmental mathematics courses within their first two semesters of coursework at Southeastern. (added)
2. Students will master the course objectives and successfully complete their developmental mathematics courses.
3. Students will progress through any required developmental sequence within one year of entry in their first developmental mathematics course.
4. Students completing developmental mathematics will demonstrate confidence in pursuing the college-level mathematics and mathematics-related course required for their program of study.
5. Students completing the developmental mathematics sequence will be able to apply mathematics to applications in their discipline and in other life situation.

The QEP-WC did not discuss the suggested assessments presented in the presentation and asked the committee to review and develop them more based on the outcomes discussion. In the discussion on assessments that follows, the term “course” has been replaced with “sequence” to reflect change to a modular organization for developmental mathematics. The subcommittee made this adjustment in terminology between this and its subsequent presentation.

#### **Assessments - Summative**

The committee presented its suggested summative assessment procedures at the June 23, 2011 meeting of the QEP Leadership Team. The report follows with explanations and summary of discussions:

(“NC” refers to an entry in the student’s course record that shows placing out/testing out of a course. “NA” refers to an entry in the school records software that indicates a student never entered or attended a class.)

### **Developmental Mathematics QEP Assessments of Student Learning Outcomes**

- 1. Students will begin taking any required developmental mathematics sequence within their first two semesters of coursework at Southeastern.**

#### The Cohort:

First Time in College

Not coded as high school or transitional program student in first term

No credit for MAT 080 NC (as required by program code)

Or: No credit for MAT 070 NC (as required by program code)

Or: No credit for MAT 060 NC (as required by program code)

#### Meeting Criteria for Success:

Students enrolled at the ten percent date in the required developmental mathematics course for the entering program code, in one of first two semesters (non-NA grade)

Time Frame:

End of Summer Term

This assessment identifies the cohort as first time college students. These students, with the exception of those noted as excluded from the cohort, will be tracked through two semesters of entering the college to determine the percentage who meet the criteria. It also specifically identifies those who will not be in the cohort. The “NC” group is excluded because they would not be entering into a developmental mathematics class because they either placed out or are not required to have the class in their specific program.

The data will be collected by the end of the summer term.

The college will measure its success by looking at the enrollment at the ten percent date in the course required for the students’ program codes. This measure will give the college the opportunity to see how accurately we place students into the required courses by the required time. Historical data will serve as a benchmark for measuring the degree of success for this outcome.

**2. Students will master the course objectives and successfully complete their developmental mathematics sequence.**

The Cohort:

Students enrolled in developmental mathematics.

Meeting Criteria for Success:

Students mastering course objectives as evidenced by earning A-C grade.

(Identify students by number of attempts)

Time Frame:

Per semester

This outcome is a direct result of the low success rate in developmental mathematics as shown earlier in this document. The cohort in this instance consists of all students enrolled in developmental mathematics at all levels. The college has historical data for success as also noted earlier, so it will compare each semester of the five-year project to this historical data. The success rate is not the pass rate of those completing with an A, B, or C grade. It is rather the number of students passing with those grades compared to the number of students enrolled at the 10 percent point.

The original report identified the cohort as “First Time in College,” the same as the previous outcome cohort. Upon consideration by the group, it determined that the cohort as defined would not provide data early enough to determine if success were happening upon implementation of the changes in developmental mathematics. The team decided that the new cohort defined above would allow the college to get data without having to follow a cohort through multiple years with the possibility that data would not be available for three years.

The mastery will be indicated by scoring 85 percent or higher on each of the modules to be created in a redesigned modular program. Based on a review of current outcomes in developmental mathematics and on a review of the North Carolina Community College Beta version of potential learning outcomes and course organization, the tentative objectives for each of the eight modules follow. Modules 1 through 3 roughly are equivalent to the current MAT 060; Modules 4 and 5 to MAT 070; Modules 6 through 8 to MAT 080:

#### Module 1

1. Demonstrate an understanding of the concepts of integers within contextual application problems
2. Correctly represent integers on a number line
3. Demonstrate the correct use of additives
4. Evaluate the absolute value of a number
5. Apply integer operations in solving contextual application problems
6. Correctly apply associative and commutative properties
7. Demonstrate understanding of exponents by converting between exponential and expanded form
8. Evaluate exponents
9. Calculate the square root of numbers containing perfect squares
10. Evaluate integer expressions by using the correct order of operations
11. Distinguish between appropriate use of area and perimeter formulas to solve geometric application problems
12. Represent the events of a geometric application problem included in this module pictorially and evaluate the correct solution using the appropriate formula

#### Module 2

1. Solve conceptual problems involving fractions and decimals
2. Visually represent fractions
3. Simplify fractions
4. Visually represent equivalent fractions and correctly place the values on the number line
5. Add and subtract fractions with like denominators
6. Write an equivalent fraction with a given denominator
7. Add and subtract fractions with unlike denominators using the lowest LCD
8. Visually represent the sum and difference of two fractions with unlike denominators
9. Multiply fractions
10. Visually represent multiplication of fractions
11. Divide fractions using reciprocals
12. Visually represent decimals
13. Correctly round decimals to a specific place value
14. Estimate sums, differences, products, and quotients with decimals
15. Demonstrate an understanding to the connections between fractions and decimals
16. Distinguish between the appropriate use of circumference and area of a circle in solving geometric applications
17. Represent events in geometric problems pictorially and evaluate solutions using correct formulas
18. Correlate negative exponents to fractions and decimals in base 10
19. Convert between standard notation and scientific notation

Module 3

1. Demonstrate an understanding of the concept of ratios, rates, proportions, and percents in the context of application problems
2. Write a ratio using a variety of notations
3. Distinguish between events in a problem that should be represented by a ratio or a rate
4. Represent percent as “parts of 100”
5. Correctly convert between fractions, decimals and percents
6. Calculate a unit rate
7. Solve application problems using ratios, rates, proportions, and percents
8. Recognize that two triangles are similar and solve for unknown sides using proportions in contextual applications
9. Convert measurements within the U.S. customary and metric system using unit analysis
10. Convert measurements between U.S. customary and metric systems using unit analysis

Module 4

1. Demonstrate an understanding of what a variable represents
2. Demonstrate the use of problem solving strategy to include multiple representations of the situation, organization of the information, and algebraic representations of linear equations and inequalities
3. Represent verbal statements as algebraic expressions, equations, and inequalities
4. Distinguish between problem events that use expressions, equations, or inequalities
5. Solve linear equations and inequalities in one variable using algebraic properties of equality
6. Demonstrate an understanding of the meaning of solutions to problems, i.e. identity, contradiction, conditional
7. Represent solutions of inequalities on a number line

Module 5

1. Analyze and interpret basic graphs to solve problems
2. Represent real world situations in tabular, graphical, and algebraic equation form using two variables
3. Generate a table of values given an equation in two variables and plot in Cartesian plane to graph a line
4. Demonstrate an understanding of the concept of slope as a rate of change in real world situations using the slope formula
5. Find and interpret the x- and y-intercepts of linear models in real world situations
6. Graph linear equations using a variety of strategies
7. Given a contextual application, write a linear equation and use the equation to make a prediction
8. Demonstrate a conceptual understanding of horizontal and vertical lines in terms of slope and graphically

Module 6

1. Demonstrate the use of a problem solving strategy to include multiple representations of the situation, organizations of the information, and algebraic representation of quadratic equations

2. Add and subtract polynomials
3. Apply exponent rules
4. Multiply polynomials
5. Divide a polynomial by a monomial
6. Factor trinomials using multiple methods
7. Factor the difference of two squares
8. Solve quadratic applications using the zero product property and critique the reasonableness of solutions found
9. Graph quadratic functions using the graphing calculator to identify and interpret the maximum, minimum, and y-intercept values and the domain and range in terms of the problem

#### Module 7

1. Demonstrate the use of a problem solving strategy to include multiple representations of the situation, the organization of the information, and algebraic representation of rational equations
2. Graph rational functions using the graphing calculator to identify and interpret the y-intercept values and domain in terms of the problem
3. Multiply and divide rational expressions
4. Add and subtract rational expressions
5. Solve rational equations

#### Module 8

1. Demonstrate the use of problem solving strategy to include multiple representations of the situation, organization of the information, and algebraic representation of radical equations
2. Correctly use rational exponents to rewrite radical expressions
3. Simplify radical expressions
4. Add and subtract radical expressions
5. Multiply radical expressions
6. Divide radical expressions
7. Solve radical equations
8. Solve quadratic equations using the quadratic function
9. Graph radical functions using the graphing calculator to identify and interpret the graph in terms of the problem

**3. Students will progress through any required developmental mathematics sequence within one year of entry in their first developmental mathematics course.**

#### The Cohort:

Students enrolled in fall term in developmental mathematics (non-NA grade) for the first time.  
(Within five years)

Not coded as high school or transitional program students

#### Meeting Criteria for Success:

Within one year of cohort registration:

Complete (A-C grade) MAT 080(as required by program code)

Or: Complete (A-C grade) MAT 070 (as required by program code)  
Or: Complete (A-C grade) MAT 060 (as required by program code)

Time Frame:

October

This measure allows the college to ensure that students move through the required developmental mathematics course or courses without taking time out and losing the skills and methodologies they have been exposed to. Students sometimes complete one course and want to stop before taking others because of dislike or fear of mathematics. If the college can keep them advancing through the sequence, they are more likely to succeed.

The cohort for this measure is limited to those who enroll fall term. And the measure will be taken every year during the five-year project in October of the following fall. Waiting until October ensures that all incompletes have been removed.

The college will develop historical data to measure the progress in meeting this outcome. Success for this outcome is that within one year of the cohort registration, students complete with an A, B, or C grade MAT 080 as required by the program code or MAT 070 as required by program code, or MAT 060 as required by the program code.

**4. Students completing the developmental mathematics sequence will demonstrate confidence in pursuing the college-level mathematics and mathematics-related courses required for their program of study.**

The Cohort (Parts A and B):

Completing MAT 080 skills (as required by program code)  
Or: Completing MAT 070 skills (as required by program code)  
Or: Completing MAT 060 skills (as required by program code)

PART A

Meeting Criteria for Success:

Students responding to survey stating that they are confident in pursuing college-level mathematics and mathematics-related courses

PART B

Meeting Criteria for Success:

Students enrolled  
(non-NA grade) in college-level quantitative literacy course. (designated as general education quantitative literacy course by program code)

Time Frame:

Start Fall 2011, then every semester

Once students have completed their required developmental mathematics courses, they will take at some point a course, either college-level mathematics or mathematics-related, in which the college assesses the general education outcome of quantitative literacy. Students cannot pass the course unless they meet or exceed expectation on the assessment. The quantitative literacy outcome evaluates the student on the following:

- Recognizing that mathematics is a process
- Recognizing that mathematics is a way of modeling/understanding real-world activities with quantitative representations
- Understanding how to approach a mathematical problem
- Demonstrating accuracy in manipulation of numerical data

If students can meet or exceed expectations on the rubric in **Chart 2** below, which is used to evaluate quantitative literacy, they will understand how to use mathematics in the real world and thereby demonstrate confidence in their mathematics skills by their success. This Part B measure considers those students who have completed MAT 060, and/or 070, and/or 080 and who receive an A, B, or C grade in the mathematics or mathematics-related course required by their program codes.

The Part A measure will be a self-assessment survey designed to show to what degree students feel confident in pursuing college-level mathematics or mathematics-related courses. This survey will be administered at the end of their developmental mathematics courses required by their program codes.

Both measures will be completed every semester beginning Fall Term 2011.

**1. Students completing the developmental mathematics sequence will be able to apply mathematics to applications in their discipline and in other life situations.**

The Cohort:

Students who completed developmental mathematics sequence, (as required by program code) (A-D grade) enrolled at ten percent date in college level courses identified in their Individual Graduation Plan as General Education Outcomes Assessment - Quantitative Literacy courses.

Meeting Criteria for Success:

Students are able to apply mathematics to examples drawn from applications in their discipline and life situations, as evidenced by passing course identified as containing the General Education Outcomes - Quantitative Literacy assessment. (as required by program code)

Time Frame:

First look in summer 2012, then annually

The cohort for this measure is students who have completed their required developmental mathematics course or courses and who are enrolled at the 10 percent point in the quantitative literacy assessment course or courses required by their program code.

## Chart 2: Quantitative Literacy Rubric

Rubric for Assessment of General Education **Quantitative Literacy** Outcome

Student Name \_\_\_\_\_

	1 Student work does not exhibit this quality in any measurable way	2 Student work exhibits quality to some measurable degree	3 Student work exhibits this quality to an acceptable degree	4 Student work exhibits this quality to a great degree	5 Student work exhibits this quality to an exceptional degree
<b>Quality</b>					
Recognizes that mathematics is a process	1	2	3	4	5
Recognizes that mathematics is a way of modeling/understanding real world activities with quantitative representations	1	2	3	4	5
Understands how to approach a mathematical problem	1	2	3	4	5
Demonstrates accuracy in manipulation of numerical data	1	2	3	4	5
<b>TOTAL POINTS</b>					

Score: 4 to 8 – does not meet expectations; 9 to 16 – meets expectations; 17 to 20 exceeds expectations

The quantitative literacy assessment in that course will be based on program-related applications or life applications. If students meet or exceed expectations on the rubric used to evaluate quantitative literacy, they will have applied mathematics to their discipline or other life situations.

The college will use historical data as a comparison for the degree of improvement in this assessment. This data will be collected annually each summer beginning 2012.

### Special Note

The college will be converting to a module system determined by the state which will replace the current course delineations for developmental mathematics. This will necessitate changes to assessments whose specifics are not clearly foreseen at this time. The modules will generally equate to the current three developmental courses, so the historical comparisons will still be made to assess the degree of success.

## Strategies to Meet Outcomes

Based on the QEP-WC's discussion of the information presented by the Research/Involvement group, the team developed the following strategies derived from the research to be used to meet the QEP learning outcomes. References are to the works used in the discussion above. In addition to the guidance the research supplied, the QEP-WC also generated additional strategies related to meeting the outcomes based on the experiences of developmental and college mathematics faculty on the sub-committee and the team:

- a. Develop and implement a modular mathematics curriculum:

This appeared to be a common approach in those schools that work on reforming developmental mathematics (part of the "emporium model" discussed in McIntosh, 2010; Bossier and Parrish, 2011; Mills, 2010; Squires, et. al., 2009; Twigg, *Developmental* n.d.; Twigg, *Increasing*, n. d.).

Since the state is also requiring a modular approach, this strategy must be a major methodology used by the college. Research clearly supports this as a method that increases student success.

This strategy assists in meeting Outcomes 2, 3, 4, and 5.

- b. Use diagnostic testing to appropriately place students in modules:

Placement testing alone is insufficient to get students into the correct levels of developmental mathematics. It will definitely not be able to place students in the appropriate modules needed to complete the developmental sequence.

Diagnostic testing will lead to more accurate placement into modules the students actually need (Hughes and Scott-Clayton, 2011).

This strategy will assist in meeting Outcomes 2 and 3.

- c. Require mastery of module outcomes for student to proceed:

The rationale is that if there are required outcomes to be successful that students must meet them all. Partial mastery is not enough to move ahead (McIntosh, 2010; <http://bpcc.edu/bulletin...>, 2011).

This mastery requirement should enable students to be prepared to enter the college-level or program-related course needed for quantitative literacy.

This strategy will assist in meeting Outcomes 2 and 3.

- d. Increase tutoring and workshop support by the Academic Skills Lab (ASL) for mathematics instruction (Lee, et. al., 2011; Gallard, Albritton, and Morgan, 2010):

Even though the ASL conducts mathematics tutoring, the college needs to look at the type of tutoring and the kinds of workshops offered. More intensive and targeted tutor training may be needed.

This strategy will assist in meeting Outcomes 2 and 3.

- e. Deliver workshops through JobLink and/or the Academic Skills Lab for Life/Work/Study skills:

Although life/work/study skills are a part of the ACA 115 Student Success course, some students do not get into the course their first term and others need to have these skills reinforced periodically during the term. If students understand how to more effectively learn and balance their daily lives with that learning, they stand a better chance of persisting to a certificate, diploma, or degree.

They also are more likely to successfully complete developmental mathematics and be prepared for college-level or program-related mathematics courses (Le, et. al., 2011; Legg and Locker, 2009).

This strategy will assist in meeting Outcomes 1 and 3.

- f. Implement an automated referral system for developmental students to the Academic Skills Lab for workshops and tutoring (This would be part of the “early alert” system discussed in “h” below); Le, et. al., 2011; <http://starfishsolutions.com...> ):

The current referral system appears to break down if the student does not go to the ASL. With an automated system, the ASL could contact a student who has been referred and who has not shown up. The result would be less time on paperwork for faculty and students and efficiency in getting tutoring for students.

This strategy will assist in meeting Outcomes 2 and 3.

- g. Use ACA classes to direct students to developmental help sources (ACA classes can provide the types of support and guidance discussed in Zaverella and Ignash, 2009; <http://www.jamessprunt.edu>, “Self -Assessment Questionnaire,”2011; <http://www.taftcollege...>, “Are You Prepared...”, 2011):

Students are currently given an orientation to college services and tutoring in general. ACA needs to spend time addressing the resources available to developmental students who account for 60 percent of the college’s enrollment.

This strategy will assist in meeting Outcomes 1, 2, and 3.

- h. Pilot an early alert system in developmental mathematics sections (Le, et. al., 2011; <http://starfishsolutions.com>):

Knowing that students are having a problem and getting them help as soon as the problem is noticed should contribute to success.

This strategy will assist in meeting Outcomes 2 and 3.

- i. Update the online college and web orientations:

These orientations need to make students with poor study and learning skills more aware of the challenges of online instruction (Zaverella and Ignash, 2009; <http://www.jamessprunt.edu> ,“Self -Assessment Questionnaire,”2011; <http://www.taftcollege.com> , “Are You Prepared...”, 2011).

These orientations also need to identify resources that are available to help students be successful, specifically in developmental mathematics.

This strategy will assist in meeting Outcomes 2 and 3.

- j. Ensure ACA classes prepare students for success in online courses (Zaverella and Ignash, 2009; <http://www.jamessprunt.edu> ,“Self Assessment Questionnaire,”2011; <http://www.taftcollege.com> , “Are You Prepared...”, 2011):

Currently, this topic is not emphasized in ACA. A specific module/lesson on behaviors and skills needed for success in online education should be incorporated into ACA.

This strategy will assist in meeting Outcomes 2 and 3.

- k. Develop methods for faculty coaching/mentoring/collaboration in developmental mathematics (Twigg, *Developmental* n. d.; Twigg, *Increasing*, n. d.; Hollis, 2009; Archie, 2006):

No regular or adjunct faculty member should be without colleagues to discuss what is occurring in developmental mathematics. This collaboration will be essential to developing the lessons in the various modules and evaluating their benefits to student learning.

This strategy will assist in meeting Outcomes 2, 3, 4, 5.

- l. Update advisement training and procedures (Legg and Locker, 2009; Lee, et. al., 2011; Starfish Early Alert; Zaverella and Ignash, 2009; <http://www.jamessprunt.edu> ,“Self -Assessment Questionnaire,”2011; <http://www.taftcollege.com> , “Are You Prepared...”, 2011):

More specific information about developmental mathematics and effective ways of communicating that information needs to be incorporated into the advisement process.

This strategy assists in meeting Outcome 1.

- m. Develop joint professional development opportunities for mathematics and disciplinary faculty (Twigg, *Developmental* n. d.; Twigg, *Increasing*, n. d.; Hollis, 2009; Archie, 2006):

Cooperative/collaborative professional development activities need to be developed to assist mathematics and disciplinary faculty in developing teaching techniques and in creating activities reflecting the use mathematics in real-world situations.

This strategy will assist in meeting Outcomes 2, 3, 4, and 5.

- n. Develop disciplinary applications for mathematics gateways to disciplinary courses:

This development of disciplinary applications needs to be an ongoing activity to be collected as a resource for all faculty members teaching mathematics. Cooperative, collaborative professional development opportunities above will provide the structure for development (Mills, 2010). These gateways will provide students with discipline or life-specific applications of mathematics in the real world.

This strategy will assist in meeting Outcome 5.

- o. Provide attitudinal workshops through JobLink and/or the Academic Skills Lab (Legg and Locker, 2009):

Overcoming fear of mathematics or the attitude of “I’m just not good at math” is necessary for student success.

This strategy will assist in meeting Outcomes 1, 2, 3, 4, and 5.

- p. Conduct mathematics activities/events to demonstrate the accessibility and usefulness of mathematics:

Students need to realize that mathematics is a part of life and to be constantly reminded of the importance of mathematics in business, industry, and science.

This strategy will assist in meeting Outcomes 1, 4, and 5.

- q. Market transitions/life-long learning to upper-level mathematics and quantitative literacy courses:

Students need to be encouraged to progress as quickly as possible through developmental mathematics and immediately move into the college-level or discipline-related mathematics courses they are required to take.

This strategy will assist in meeting Outcomes 1, 4, and 5.

## **Activities and Timeline**

The QEP capabilities subcommittee presented its timeline for the activities associated with the five student outcomes presented at the June 23, 2011 meeting of the QEP-WC. The timeline was refined by the committee. The result of this work is presented below and in Table 5.

To prepare for QEP activities, historical data beginning in Summer Term 2008 and data for annual and semester updates was collected as part of the development process in Summer Term 2011 from the Curriculum, Registration, Progress, Financial Aid Report (CRPFAR) housed in the North Carolina Community College System Office Data Warehouse to establish a benchmark for the measures for Outcomes 1, 2, 3,4b, and 5. The baseline data for Objective 4a will be collected from a survey which will be developed and administered Fall Term 2011. The survey will then be administered every semester. This is not a QEP activity, but it is necessary for the beginning implementation in Fall Term 2011.

The college will develop an internal automated referral system to quickly identify students that are having difficulty in their developmental coursework. This system will be developed during 2011-12 for pilot testing in Fall Term 2012. After a year the college will assess the effectiveness of the institutionally developed program. Starfish Retention Solutions Early Alert (Starfish) has indicated that they will be developing a more comprehensive system that will be able to integrate with the college's data systems beginning Fall 2014. If the internally developed system is not producing the desired results, the college will purchase begin implementation training for Starfish in Fall 2014. The launch date for the new system, if required, will be Spring Term 2015.

Data counting the number of alerts sent will be collected beginning with the Fall Term 2012 and every semester thereafter. Numbers of students referred for services currently is collected as part of the North Carolina Community College System membership hour reporting process.

Early Alert is a tool for instructors to refer students who have been identified with low grades, assignment tardiness, or non-participation to their advisor and the ASL for tutoring and workshops. Workshops may include study skills, mathematics applications and attitudinal topics such as overcoming mathematics anxiety, and applications of mathematics in life and work situations. Workshops will occur every semester and data will be collected annually.

Three years of historic data will be collected and semester updates will be collected from the Curriculum, Registration, Progress, Financial Aid Report (CRPFAR) housed in the North Carolina Community College System Office Data Warehouse to establish a benchmark for developmental mathematics referrals to the Academic Skills Lab (ASL). Beginning Fall Term 2011, all student referrals for assistance in developmental mathematics to the ASL will be counted. Over the five year timeline, the data will highlight the effectiveness of the implementation of the automated referral system, the mathematics skill deficiencies that students experience, the effectiveness of early intervention, the new

modular mathematics program, and the impact of the professional development for instructors and advisors.

A self-assessment survey will be developed and delivered to students Fall Term 2011 to measure confidence in pursuing college-level mathematics and mathematics-related courses required by their program. The survey will be administered to all students at the end of their developmental mathematics courses required by their program code. Each semester, every year, students completing the developmental sequence will be requested to complete the survey.

The college will launch in Summer Term 2011 a marketing program (QEP Impressions) with the goal of increasing student awareness of mathematics and its application in programs of study and real life.

The State of North Carolina will provide the framework for modules for developmental mathematics. The modules will be matched to the current developmental mathematics courses (MAT 060, 070, 080) in Spring Term 2012. Included in this process will be a matrix mapping the relationship between diagnostic skills and module outcomes. The full-time mathematics faculty will be involved in professional development activities, workshops and meetings to complete any necessary work to finalize the curriculum during the spring term. Faculty members working on the curriculum will only teach two campus classes at the most, which will meet consecutively, to provide them flexibility to attend the necessary meetings and complete their work. Faculty will have the opportunity to teach no campus classes if desired.

During Spring Term 2012, appropriate space for a mathematics computer lab will be identified. The lab will be constructed over the summer when campus enrollment is minimal. Initial training for part-time instructors in the modular mathematics curriculum will take place. Implementation of the modular curriculum will begin in Fall Term 2012. In addition to the training for the modular mathematics, in future terms professional development workshops in coaching, mentoring, and collaboration across disciplines will be offered. Data will be collected each semester indicating the level of developmental faculty engagement in these activities beginning Fall Term 2013. An important goal of the workshops is to create interdisciplinary applications to show mathematics students that the skills they are learning can be applied across the disciplines and in real life. The number of applications developed will be tracked every semester beginning Summer Term 2014.

The college online orientation program will be updated Summer Term 2012 to make it user friendly with item-specific links and video tutorials and to reflect the additional developmental help sources available at the college. ACA 115 Student Success, a required course for all degree programs, will be revised with additional information about taking online courses and using developmental help sources.

**Table 5** below graphically links QEP activities to outcomes indicated in abbreviated form.

**Table 5: Activities for QEP Implementation**

<b>FALL 2011</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
QEP MAT faculty professional development workshops/seminars		X	X	X	X	
QEP MAT faculty travel to pilot schools		X	X	X	X	
Update outcome measure with available data		X	X	X4b	X	
Develop survey for students				X4a		
Deliver survey for students, establish baseline				X4a		
Determine number of developmental mathematics referrals to ASL						X
Determine number of developmental mathematics hours in ASL starting 2008						X
QEP “ Impressions “						X
<b>SPRING 2012</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Mapping between diagnostic skills and module outcomes to appropriately place students	X	X	X	X	X	
Match new modules to current developmental		X	X	X	X	

courses						
Allocate space for Math Labs		X	X	X	X	
Student Learning Outcomes (SLOs) and Assessments developed for all modules		X	X	X	X	
Curriculum Materials selected for all modules		X	X	X	X	
Software selected for Emporium Lab setting		X	X	X	X	
Faculty Development – Contextual/Conceptual Consultant		X	X	X	X	
Faculty Development – NCMATYC Conference		X	X	X	X	
Update outcome measure with available data		X		X4b	X	
Advisement procedures update	X					
Advisor training presented	X					
Deliver survey for students				X4a		
Determine number of developmental mathematics referrals to ASL						X
Develop in-house Early Alert Referral System (EARS)						X
Transition from Interim QEP Director to Permanent Position						X
Revised ACA course to ensure student success with online courses and access to help sources						X

Determine number of developmental mathematics hours in ASL						X
QEP “ Impressions “						X
<b>SUMMER 2012</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Update outcome with data now available.	X	X		X	X	
Initial Modular Mathematics Curriculum Training Completed		X	X	X	X	X
Finalize Staffing for all fall classes and labs		X	X	X	X	X
Complete pilot training in QEP MAT lab for instructors/lab tutors		X	X	X	X	X
Complete set up of Mathematics Computer Labs		X	X	X	X	X
Develop pilot training for part-time faculty		X	X	X	X	
Deliver survey for measure 4a baseline				X4a		
College web orientation updated						X
College online orientation updated						X
Determine number of developmental mathematics referrals to ASL						X
Determine number of Life/Work/ Study Skills						X

workshops						
Determine number of attitudinal workshops						X
Determine number of developmental mathematics hours in ASL						X
QEP “ Impressions “						X
<b>FALL 2012</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Training for new math faculty and tutors		X	X	X	X	X
Begin adjustment of module activities to address observations from initial offering		X	X	X	X	
Update outcome with data now available.		X	X	X	X	
Deliver initial pre-tests and place students into modules		X				X
Advisor Training Sessions Presented	X					
Collect data from outcome completion rates in modules			X			
Deliver Survey for measure 4a first year implementation				X4a		
Determine number of developmental mathematics referrals to ASL						X
Implementation of EARS to ASL						X

Determine number of “Early Alerts” sent						X
Determine number of developmental mathematics hours in ASL						X
QEP “Impressions”						X
Determine how to complete registration/financial aid calculations for variable credit shell courses beginning Fall 2013						X
<b>SPRING 2013</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Training for new math faculty and tutors		X	X	X	X	X
Update outcome measure with available data		X		X	X	
Begin use of state-wide Diagnostic testing in admissions process	X					X
Deploy Fall 2013 schedule with new variable credit shell courses	X					X
Data from outcome rates in modules		X	X			
Develop activities for initial “Pi Day”				X	X	
Deliver 1 <sup>st</sup> Annual Pi Day				X	X	
Deliver survey for students 1 <sup>st</sup> year implementation				X4a		
Determine number of developmental mathematics						X

referrals to ASL						
Determine number of "Early Alerts" sent						X
Determine number of developmental mathematics hours in ASL						X
QEP " Impressions "						X
<b>SUMMER 2013</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Begin math faculty mentoring/collaboration program		X	X	X	X	X
Training for new math faculty and tutors		X	X	X	X	X
Update outcome with data now available.	X	X		X	X	
Special Summer workshop to develop additional contextual applications with consultants from discipline areas		X	X	X	X	
Additional applications inserted in appropriate modules		X	X	X	X	
Develop training activities for individuals registering for new shell courses	X					X
Data from outcome rates in modules		X	X			
Deliver survey for measure 4a baseline				X4a		

Determine number of developmental mathematics referrals to ASL						X
Determine number of “Early Alerts” sent						X
Determine number of Life/Work/ Study Skills workshops						X
Determine number of attitudinal workshops						X
Determine number of developmental mathematics hours in ASL						X
Number of mathematics activities/events offered annually						X
QEP “ Impressions “						X
<b>FALL 2013</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Determine the impact of the initial year of program implementation	X	X	X	X	X	
Review impact of EARS to determine future direction		X	X	X	X	X
Training for new math faculty and tutors		X	X	X	X	X
Update outcome with data now available.		X	X	X	X	
Initial Delivery of new contextualized applications		X	X	X	X	

Begin planning Spring Mathematics Competition for students				X	X	X
Advisor Training Sessions Presented	X					X
Data from outcome rates in modules		X	X			
Develop list of area schools that will be participating in math competitions				X		X
Deliver Survey for measure 4a first year implementation				X4a		
Initial Delivery of shell courses						X
Determine number of developmental mathematics referrals to ASL						X
Determine number of “Early Alerts” sent						X
Determine number of developmental mathematics hours in ASL						X
QEP “Impressions”						X
Percentage of developmental mathematics instructors participating in coaching/mentoring/collaboration workshops						X
<b>SPRING 2014</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Train new math faculty and tutors		X	X	X	X	X

Update outcome measure with available data		X		X	X	
Data from outcome rates in modules		X	X			
Review and refine activities for “Pi Day”				X	X	
Develop materials for mathematics competition				X	X	
Deliver 2 <sup>nd</sup> Annual Pi Day				X	X	
Deliver Mathematics Competition for Students				X	X	
Deliver survey for students				X4a		
Determine number of developmental mathematics referrals to ASL						X
Determine number of “Early Alerts” sent						X
Determine number of developmental mathematics hours in ASL						X
QEP “ Impressions “						X
Percentage of developmental mathematics instructors participating in coaching/mentoring/ collaboration workshops						X
<b>SUMMER 2014</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Update outcome with data now available.	X	X		X4b	X	

Summer workshops to develop contextual applications		X	X	X	X	
Contextual Applications inserted in appropriate modules		X	X	X	X	
Data from outcome rates in modules		X	X			
Deliver survey for measure 4a				X4a		
Number of disciplinary applications for mathematics gateways to disciplinary courses developed in the previous year					X	
Determine number of developmental mathematics referrals to ASL						X
Determine number of “Early Alerts” sent						X
Determine number of Life/Work/ Study Skills workshops						X
Determine number of attitudinal workshops						X
Determine number of developmental mathematics hours in ASL						X
Number of mathematics activities/events offered annually						X
QEP “ Impressions “						X
Percentage of developmental mathematics instructors participating in coaching/mentoring/						X

collaboration workshops						
Number of developmental mathematics and disciplinary faculty participating in joint professional development in the last year.						X
<b>FALL 2014</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Train new math faculty/tutors		X	X	X	X	X
Continue math faculty mentoring/collaboration program		X	X	X	X	
Update outcome with data now available.		X	X	X	X	
Data from outcome rates in modules		X	X			
Advisor update session	X					
Deliver Survey for measure 4a first year implementation				X4a		
Determine number of developmental mathematics referrals to ASL						X
Determine number of "Early Alerts" sent						X
Determine number of developmental mathematics hours in ASL						X
QEP "Impressions"						X

Percentage of developmental mathematics instructors participating in coaching/mentoring/collaboration workshops						X
<b>SPRING 2015</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Train new math faculty and tutors		X	X	X	X	X
Update outcome measure with available data		X		X	X	
Data from outcome rates in modules		X	X			
Plan and deliver annual Pi Day				X	X	
Plan and deliver mathematics competition				X	X	
Deliver survey for students				X4a		
Determine number of developmental mathematics referrals to ASL						X
Determine number of "Early Alerts" sent						X
Determine number of developmental mathematics hours in ASL						X
QEP " Impressions "						X
Percentage of developmental mathematics instructors participating in coaching/mentoring/						X

collaboration workshops						
<b>SUMMER 2015</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Update outcome with data now available.	X	X		X	X	
Summer workshops to develop contextual applications		X	X	X	X	
Contextual Applications inserted in appropriate modules		X	X	X	X	
Data from outcome rates in modules		X	X			
Deliver survey for measure 4a				X4a		
Number of disciplinary applications for mathematics gateways to disciplinary courses developed in the previous year					X	
Determine number of developmental mathematics referrals to ASL						X
Determine number of “Early Alerts” sent						X
Determine number of Life/Work/ Study Skills workshops						X
Determine number of attitudinal workshops						X

Determine number of developmental mathematics hours in ASL						X
Number of mathematics activities/events offered annually						X
QEP “ Impressions “						X
Percentage of developmental mathematics instructors participating in coaching/mentoring/ collaboration workshops						X
Number of developmental mathematics and disciplinary faculty participating in joint professional development in the last year.						X
<b>FALL 2015</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Train new math faculty/tutors		X	X	X	X	X
Continue math faculty mentoring/collaboration program		X	X	X	X	
Update outcome with data now available.		X	X	X	X	
Data from outcome rates in modules		X	X			
Advisor update session	X					
Deliver Survey for measure 4a				X4a		

Determine number of developmental mathematics referrals to ASL						X
Determine number of "Early Alerts" sent						X
Determine number of developmental mathematics hours in ASL						X
QEP "Impressions"						X
Percentage of developmental mathematics instructors participating in coaching/mentoring/collaboration workshops						X
<b>SPRING 2016</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Train new math faculty and tutors		X	X	X	X	X
Update outcome measure with available data		X		X	X	
Data from outcome rates in modules		X	X			
Plan and deliver annual Pi Day				X	X	
Plan and deliver mathematics competition				X	X	
Deliver survey for students				X4a		
Determine number of developmental mathematics referrals to ASL						X

Determine number of “Early Alerts” sent						X
Determine number of developmental mathematics hours in ASL						X
QEP “ Impressions “						X
Percentage of developmental mathematics instructors participating in coaching/mentoring/ collaboration workshops						X
<b>SUMMER 2016</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Begin work on Final QEP Report	X	X	X	X	X	
Update outcome with data now available.	X	X		X	X	
Summer workshops to develop contextual applications		X	X	X	X	
Contextual Applications inserted in appropriate modules		X	X	X	X	
Data from outcome rates in modules		X	X			
Deliver survey for measure 4a				X4a		
Number of disciplinary applications for mathematics gateways to disciplinary courses developed in the					X	

previous year						
Determine number of developmental mathematics referrals to ASL						X
Determine number of “Early Alerts” sent						X
Determine number of Life/Work/ Study Skills workshops						X
Determine number of attitudinal workshops						X
Determine number of developmental mathematics hours in ASL						X
Number of mathematics activities/events offered annually						X
QEP “ Impressions “						X
Percentage of developmental mathematics instructors participating in coaching/mentoring/ collaboration workshops						X
Number of developmental mathematics and disciplinary faculty participating in joint professional development in the last year.						X

<b>FALL 2016</b>	1. Start required developmental mathematics within first two semesters	2. Master course objectives; complete developmental math courses	3. Complete required developmental math sequence within one year	4. Confidently pursue mathematics-related courses in their program of study.	5. Apply math to applications in their discipline and in other life situations.	Support Activities
Work on Final QEP Report	X	X	X	X	X	
Train new math faculty/tutors		X	X	X	X	X
Continue math faculty mentoring/collaboration program		X	X	X	X	
Update outcome with data now available.		X	X	X4a&b	X	
Data from outcome rates in modules		X	X			
Advisor update session	X					
Deliver Survey for measure 4a				X4a		
Determine number of developmental mathematics referrals to ASL						X
Determine number of "Early Alerts" sent						X
Determine number of developmental mathematics hours in ASL						X
QEP "Impressions"						X
Percentage of developmental mathematics instructors participating in coaching/mentoring/collaboration workshops						X

## Capability to Carry Out the QEP

The following provides a detailed plan designed to show the significant events related to the completion of the QEP. The “Expense” column shows the financial commitment of the college.

### JUNE 2011-JUNE 2016

Tasks	Strategies & Methods	Expense
Promotion of QEP to faculty, staff, students, and the community.	Publicize the QEP through media including press releases, public service announcements, paid advertising, as well as the college website, public access television station and social media.	\$2,000 per year (2011-16)

### NOVEMBER-DECEMBER 2011

Tasks	Strategies & Methods	Expense
Advertise and hire a QEP Director to oversee the QEP implementation.	Appoint QEP Director with higher-education work experience and project management experience who will report directly to Dr. Morgan Phillips, Vice President of Curriculum Instruction.  Assign administrative support duties to current staff.	\$23,667 (October 2011 – June 2012). \$35,500 recurring each year (2013-16).  The position will be charged 50% to QEP and 50% to other curriculum duties and funded from regular state operating expenses.  In-kind contribution, 25% of Curriculum Processing Assistant’s salary = \$7,486 (October 2011-June 2012), \$11,229 recurring expense (June 2012-16)
Math Faculty Attend Professional Development and Visit Pilot Sites	To prepare for the new program, math faculty will attend training events and visit pilot schools.	Travel costs and per diem = \$5,000

### SPRING 2012

Tasks	Strategies & Methods	Expense
Develop and implement a modular mathematics curriculum.  Require mastery of module outcomes for student to proceed.	Develop course content for the eight modules based on the framework from the North Carolina Community College System.  Select three faculty members (at least one developmental mathematics instructor and one mathematics instructor) to chair the task force to develop the course content. As part of the development, include specific mastery of module outcomes for	The chairs of the task force will be given very limited campus classes in order to develop these courses during spring semester 2012.  Estimated cost projected: \$7,913 (adjunct faculty at masters’ rate (\$28.71) 16 hours per contact hour release, 16 hours release, FICA rate 7.65%)

	<p>a student to proceed to the next module.</p> <p>Other faculty and staff should be available to offer assistance as needed without release time or additional pay.</p>	<p>Travel expense estimated at \$500 to visit nearby school(s) that are piloting new curriculum format.</p>
<p>Deliver workshops through JobLink and/or the Academic Skills Lab for life/work/study skills.</p> <p>Provide attitudinal workshops through JobLink and/or the Academic Skills Lab.</p> <p>Use ACA classes to direct developmental students to help sources.</p>	<p>Revise ACA curriculum to incorporate workshops offered either through JobLink or the Academic Skills Lab for life/work/study skills and to provide attitudinal workshops through JobLink and/or the Academic Skills Lab which focus on mathematics anxiety and uses of mathematics through all life skills.</p>	<p>In-kind, \$500 total for ten workshops.</p>
<p>Update advisement training and procedures for developmental mathematics students.</p>	<p>Curriculum instruction and student development staff will review procedures and update to align with new requirements.</p> <p>Training will be provided to acquaint all advisors, developmental mathematics instructors and staff with new procedures.</p>	<p>In-kind: review and development, \$4,000; training development, \$2,000; training sessions, \$12,000.</p>
<p>Update the online college and web orientations.</p> <p>Ensure ACA classes prepare students for success in online courses.</p>	<p>Revise web orientations to include more user friendly instructions such as item-specific, brief video tutorials, <u>e.g.</u>: How to upload an assignment into Moodle (Complete during spring semester 2012 for offering in fall 2012)</p> <p>Include training in ACA to prepare students for success in online courses.</p>	<p>32 hours at \$28.71/hour for EDU-Cable to develop video tutorials and revise ACA curriculum. \$1,000 in-kind.</p>

**SUMMER 2012**

<b>Tasks</b>	<b>Strategies &amp; Methods</b>	<b>Expense</b>
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<p>Create a dedicated computer lab to accommodate developmental mathematics students only as they proceed through the various modules.</p>	<p>Designate appropriate lab space. Purchase and install computer equipment.</p>	<p>Cost for 51 computer stations, \$102,000.</p> <p>Cost for part-time tutors for lab, \$18,000, 2012-2015.</p> <p>In-kind, installation and maintenance, \$1,000.</p>
<p>Develop and provide training to part-time faculty in teaching the modules.</p>	<p>Request that EDU-Cable produce a video recording of the training for later use with new instructors.</p>	<p>\$2,000 stipend for consultant (possibly instructor from a pilot school) to develop and present the training.</p> <p>\$500 stipend for instructors who attend the training while not working for the college. Estimate 15 instructors, \$7,500 total.</p>

**FALL 2012**

<b>Tasks</b>	<b>Strategies &amp; Methods</b>	<b>Expense</b>
<p>Pilot an early alert system in developmental mathematics sections.</p> <p>Implement a system that automatically refers developmental students to the Academic Skills Lab for workshops and tutoring.</p>	<p>Implement an automated referral system, to guide students in developmental mathematics courses with low grades, assignment tardiness, or non-participation to secure an appointment with the Academic Skills Lab for tutoring and workshops or with a Counselor.</p> <p>Continue to use Accutrack to capture and transmit tutoring data (frequency, length) in the Academic Skills Lab.</p> <p>Interface Accutrack with Early Alert.</p>	<p>Develop In-house Referral system \$5,000 (in-kind personnel and supplies)</p> <p>The newest version of Accutrack is \$3,700 (one-time purchase), and the cost of networking the sign-in station is \$250.</p>
<p>Increase tutoring and workshop support by the Academic Skills Lab for mathematics instruction.</p>	<p>Full-time mathematics instructors will schedule some office hours each week with the Academic Skills Lab to tutor developmental mathematics students who have been referred by instructors.</p>	<p>In-kind cost (16 weeks fall and spring semesters, four full-time mathematics instructors) \$5,400 per year, including fringe. By tracking referrals of students who get assistance in the ASL, FTEs can be generated to add to the college's overall state funding.</p>

**SPRING 2013**

<b>Tasks</b>	<b>Strategies &amp; Methods</b>	<b>Expense</b>
Conduct mathematics activities/events to demonstrate the accessibility and usefulness of mathematics.  Market transitions/life-long learning to upper level mathematics and quantitative literacy.	Create an annual Pi Day event (March 14), a student exploration day centering on mathematics.	Annual cost projection of Pi Day is \$1000 to cover speakers and/or other activities involving purchase of supplies.
Use diagnostic testing to appropriately place students in modules.	Develop and/or align diagnostic testing with the eight modules for placement of students during spring semester 2012.	Potential costs for first year of implementation for mathematics testing 2,000 students, 4 units, at \$1.75 each: \$14,000. Subsequent years would include new students who place into developmental mathematics at \$7.00 per student. (estimate 400 students) \$2,800.

**SUMMER 2013**

<b>Tasks</b>	<b>Strategies &amp; Methods</b>	<b>Expense</b>
Evaluate changes in developmental mathematics success/retention rates.	Compare Fall/Spring 2011-12 baseline to Fall/Spring 2012-13	In-kind cost of \$500.

**FALL 2013**

<b>Tasks</b>	<b>Strategies &amp; Methods</b>	<b>Expense</b>
Develop methods for faculty coaching/mentoring/collaboration in developmental mathematics.	Develop and offer one off-site weekend workshop through JobLink for Academic Skills Lab and developmental mathematics instructors that will showcase effective coaching/mentoring and collaboration techniques that will enhance teamwork.	\$3,500 each year (2013-16). 15 mathematics instructors, plus consultant/trainer. Hotel rooms, \$1,000; meals, \$1,200; travel by SCC bus \$100.

**FALL 2013-SPRING 2014**

<b>Tasks</b>	<b>Strategies &amp; Methods</b>	<b>Expense</b>
Adjust program for continuation in Spring 2014.	Adjust curriculum, teaching methods, and instructional materials based upon evaluation results.	In-kind cost of \$5,000.
Conduct mathematics activities/events to demonstrate the accessibility and usefulness of mathematics.  Market transitions/life-long learning to upper level mathematics and quantitative literacy.	Create and hold mathematics competitions for elementary school-age children and parents, middle schools and high schools. EDU-Cable will video record and broadcast on public-access television channel.	Annual cost projection for mathematics competition is \$500 for awards, materials and supplies.  Initial in-kind cost of \$1,500 for development.  In-kind annual cost of \$3,000 to operate the event.

**FALL 2013-FALL 2015**

<b>Tasks</b>	<b>Strategies &amp; Methods</b>	<b>Expense</b>
Develop discipline-related applications to serve as an introduction to the real-world mathematics used in students' chosen field (mathematics gateways).	Contract with consultant(s) to work with designated faculty in developing mathematics gateways.	\$5,000 per year (2013-15) for consultant(s).  In-kind cost, faculty release time, approximately \$3,000.
Develop joint professional development opportunities for mathematics and disciplinary faculty.	Identify consultant(s) that could provide joint professional development opportunities to provide training for better connectivity between mathematics and the various disciplines.  Identify areas of focus each year and contract with consultants with expertise in areas identified.  Focus training on working with the instructors to develop disciplinary applications for mathematics gateways to the various disciplines through development of contextualized toolkits.	Contract with consultant(s), cost estimated at \$5000 for annual development/training.

**SUMMER 2014**

<b>Tasks</b>	<b>Strategies &amp; Methods</b>	<b>Expense</b>
Evaluate changes in developmental mathematics success/retention rates.	Compare three years of data: fall/spring 2011-12 baseline, fall/spring 2012-13 and fall/spring 2013-14.	Negligible in-kind

**FALL 2014-SPRING 2015**

<b>Tasks</b>	<b>Strategies &amp; Methods</b>	<b>Expense</b>
Possibly change Early Alert Systems.	Implement an automated referral system, such as Early Alert with Starfish Retention Solutions, to guide students in developmental mathematics courses with low grades, assignment tardiness, or non-participation to secure an appointment with the Academic Skills Lab for tutoring and workshops or with a Counselor.	The first year cost, 25 training/implementation hours and license fee, is \$13,750.  Annual license fee and 5-10 hours professional services will cost \$11,500 each subsequent year (2014-16).
Adjust program for continuation in Spring 2015.	Adjust curriculum, teaching methods, instructional materials based upon evaluation results.	Negligible in-kind

In **Table 6** below is a summary budget sheet showing the financial commitment of the college to carry out the QEP for the five years of the project.

Table 6: QEP Summary Budget Sheet

	Year 1 2011-2012		Year 2 2012-2013		Year 3 2013-2014		Year 4 2014-2015		Year 5 2015-2016		Total
	Actual	In-Kind	Actual	In-Kind	Actual	In-Kind	Actual	In-Kind	Actual	In-Kind	
QEP Director (0.5 FTE Position with Fringe)	\$20,310		\$50,775		\$50,775		\$50,775		\$50,775		\$223,410
New Computer Lab Equipment			102,000								102,000
Part-time Tutors for Computer Lab			18,000		18,000		18,000		18,000		72,000
Administrative Support (0.25 FTE, Curriculum Processing Asst.)		\$7,486		\$11,229		\$11,229		\$11,229		\$11,229	52,402
Early Alert System (and Training)							13,750		11,500		25,250
Diagnostic Tests (2,000 2011-12, 500 Subsequent)			14,000		2,800		2,800		2,800		22,400
Full-time Mathematics Instructors to Provide One Hour of Tutoring Each Week				5,400		5,400		5,400		5,400	21,600
Consultants for Developing Disciplinary Applications					5,000		5,000		5,000		15,000
Advisement Training Sessions		12,000									12,000
Off-site Workshop for Faculty Coaching/Mentoring (Consultant, Hotel, Meals)					3,500		3,500		3,500		10,500
Promotion/Advertising of QEP	2,000		2,000		2,000		2,000		2,000		10,000
Adjust Program for Continuation						5,000		5,000			10,000
Instructional Materials for Development	5,000		1,000		2,000		1,000		1,000		10,000
Cost of Operating Mathematics Competition						3,000		3,000		3,000	9,000

Release Time for Adjunct Faculty to Develop Disciplinary Applications with Consultants					3,000		3,000		3,000		9,000
Adjunct Faculty Release Time	7,913										7,913
Stipend for Instructors to Attend Training Outside of Their Contracts			7,500								7,500
Review and Development of Advisement Procedures		4,000									4,000
Annual Pi Day Celebration			1,000		1,000		1,000		1,000		4,000
Accutrack	3,700										3,700
Development of Advisement Training		2,000									2,000
Consultant to Develop and Present Training for Teaching New Modules			2,000								2,000
Mathematics Competition Supplies					500		500		500		1,500
Development of Mathematics Competition						1,500					1,500
Installation of Computer Lab				1,000							1,000
Video Tutorial Production and ACA Curriculum Revision		1,000									1,000
Evaluate Changes in Success/Retention Rates						500				500	1,000
Travel to Visit Pilot Schools	500										500
Life/Work/Study Skills and Attitudinal Workshops		500									500
Networking ASL Station	250										250
Total	\$ 39,673	26,986	198,275	17,629	88,575	26,629	101,325	24,629	99,075	20,129	642,925

## Criteria for Success on Outcomes

The college will use the following historical data to create benchmarks as criteria to measure success on each outcome. [Appendix D](#) gives the basic methodology used to calculate the percentages shown in the various tables below:

### Outcome 1: Students will begin taking any required developmental mathematics sequence within their first two semesters of coursework at Southeastern.

Historical data on registration within the first two semesters in [Table 7](#) below indicates the following:

<b>Table 7: Outcome #1 - Percentage of Cohort Enrolling for Developmental Mathematics in One of First Two Terms</b>			
	2008	2009	2010
Cohort	187	198	192
Registered for DevEd MAT at 10% Date for fall or spring term	164	157	160
Not enrolled and not testing out	23	41	32
Percent of cohort enrolled for DevEd MAT	88%	79%	83%

These figures take into consideration only those students who actually tested and placed into developmental mathematics. All students may not have tested. Additionally, the figures do not take into account those students whose Individual Graduation Plan (IGP) does not require developmental mathematics or taking a program-required mathematics class during the first two semesters.

The college's goal for this outcome is 100 percent registered, but that may not be possible without program changes. Therefore, the criterion for success by the end of the five-year period is as follows:  $\geq 90$  percent registered within the first two semesters.

### Outcome 2: Students will master the course objectives and successfully complete their developmental mathematics courses.

Since the college will be instituting a modular approach to developmental mathematics, the current division of developmental mathematics shown in the table below will not be applicable. However, by using an overall success rate, the college will effectively be able to compare progress made each year with the historical benchmark.

In [Table 8](#) below, historical data indicates the following success rates in developmental mathematics:

<b>Table 8: Outcome #2 - Students Successfully Completing Their Developmental Mathematics Courses</b>									
	<b>2008-2009</b>			<b>2009-2010</b>			<b>2010-2011</b>		
	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer
<b>MAT 60</b>	52%	54%	62%	53%	43%	63%	55%	47%	42%
<b>MAT 70</b>	50%	46%	50%	49%	51%	44%	45%	46%	52%
<b>MAT 80</b>	42%	39%	39%	49%	37%	40%	48%	52%	45%
<b>SUMMARY</b>	49%	47%	52%	51%	45%	50%	50%	48%	47%

Success refers to the percentage of all those students who registered for the class who completed with an A, B, or C grade.

Given that the average above is 49 percent and the national average is around 50 percent, the college is already at the national average. However, the point of this QEP is to produce success for the student; therefore, the college's criterion for success is  $\geq 62.5$  percent, or slightly more than 2 percent growth each of the five years of the QEP implementation.

**Outcome 3: Students will progress through any required developmental mathematics sequence within one year of entry in their first developmental mathematics course.**

Not only does the college want to get students into the appropriate developmental classes/modules within the first two semesters, but it also wants them to progress through their developmental requirements without time intervening between classes or modules. This approach keeps the students' skills from deteriorating.

In the historical data in [Table 9](#) below, it is evident that a low percentage of students meet this outcome.

Given the low percentages, the college criterion for success is  $\geq 50$  percent completing developmental mathematics requirements within the first year, during the five years of the QEP. This is slightly more than 2 percent each year of the QEP implementation.

<b>Table 9: Outcome #3 - Enrolled Cohort of First-Time Students Completing Developmental Mathematics in One Year</b>			
	2008	2009	2010
Enrolled in Developmental Mathematics in Fall	115	89	*
Completing Required Developmental Mathematics in One Year	23	35	*
Percent of Cohort Completing Developmental Mathematics	20%	39%	*

\*Data available October 2011

**Outcome 4: Students completing the developmental mathematics sequence will demonstrate confidence in pursuing the college-level mathematics and mathematics-related courses required for their program of study.**

Confidence is an attitude that can be measured indirectly by two criteria: the student’s own attitudes toward mathematics and the student signing up for the appropriate classes as soon as possible.

To measure perceived attitudes, the college will develop a survey to administer at the end of the Fall Term 2011 and use the results as a benchmark to measure growth in student confidence as an outgrowth of QEP activities. By the final term of the QEP in fall 2016, success will be measured as the college being consistently above the benchmark.

Another indirect measure of attitude is the number of students completing developmental mathematics who register for the required program college-level mathematics or mathematics-related courses which measure the general education quantitative literacy outcome. Historical data in **Table 10** below show this measure to be well under 50 percent:

<b>Table 10: Outcome #4b - Percentage of Cohort Completing all Developmental Mathematics who Enrolled in Required General Education Quantitative Literacy Course</b>			
	2008	2009	2010
Cohort	23	35	*
Enrolled in Required Quantitative Literacy Course Within the Following Year	9	15	*
Not Enrolled	14	20	*
Percent of Cohort Registered for Quantitative Literacy	39%	43%	*

\*Data available October 2011

Through individual examination of student records in the cohort, the college researcher observed a trend toward mathematics avoidance – students waiting until the last moment possible to take required mathematics or mathematics-related courses. This avoidance may reflect a fear or lack of confidence in their ability to be successful.

After the five years of QEP implementation, the college would consider the program successful if  $\geq 65$  percent of the students registered for the required courses within the year following completion of developmental mathematics. This would represent a 4.5 percent growth for each year of implementation.

**Outcome 5: Students completing the developmental mathematics sequence will be able to apply mathematics to applications in their discipline and in other life situations.**

The measure of success on this outcome uses the data generated by the quantitative literacy assessment in the college-level mathematics course and mathematics-related courses required in programs. Quantitative literacy assessment uses life situations and discipline-related situations to measure competency. Therefore, it is a reasonable data source for the outcome. Students must pass the quantitative literacy assessment to pass the mathematics or mathematics-related course they are taking. Success in subsequent required mathematics course is a Critical Success Factor (CSF) used by the North Carolina Community College System. For the CSF, the state requires as 80 percent success rate. The college’s general education guidelines also view success as 80 percent passing.

In the historical data in the **Table 11** below, the pass rate took a 22 percent drop from 2008 to 2009:

<b>Table 11: Outcome #5 - Percentage of Cohort, Taking Quantitative Literacy Course, Who Passed</b>			
	2008	2009	2010
Cohort - Took the Required Quantitative Literacy Course	9	15	*
Passed Required Quantitative Literacy Course	8	10	*
Did Not Pass	1	5	*
Percent of Cohort Passing	89%	67%	*

\*Interim data available October 2011

Success on this outcome will require increasing the pass rate to  $\geq 85$  percent, which will also reach the upper limit of the institution’s benchmark for success on the CSF.

### **Brief Summary**

The college's quality enhancement plan emerged from its normal planning processes and involved all segments of the college community. The final topic choice is reflective of a decision based on substantial historical data and the college's emphasis in its strategic plan on developmental education as a critical issue.

After research on successful strategies for improving developmental mathematics and construction of outcomes that would indicate improvement of the college's program, the Quality Enhancement Plan Writing Committee developed strategies to bring about the desired changes specified in the outcomes and determined a measured approach to implementing strategies and determining their impact on meeting the outcomes. The committee defined what success in meeting these outcomes entails. Additionally, it has determined what resources it will need and created a budget which will allow implementation and completion of the five-year plan to accomplish its goals. The ultimate results of the QEP will be an institution better prepared to meet the needs of its students and stronger, better prepared students who can meet their educational goals.

## Appendix A: Institutional Dashboard

1 INSTITUTIONAL LEVEL IEP									
2 STUDENT GOALS		benchmarks		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
		low	high						
3	Satisfaction of Program Completers and Non-Completers	90%	95%	● 99%	● 99%	● 98%	● 98%	● 96%	
4	Curriculum Student Retention, Graduation, and Transfer	65%	70%	● 65%	● 68%	● 66%	● 69%	● 74%	
5 BASIC SKILLS		benchmarks		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
		low	high						
6	Progress of Basic Skills Students	75%	80%	● 84%	● 86%	● 89%	● 75%	● 76%	
7	Growth in Basic Skills FTE Generated	0%	2%	● -19%	● -3%	● 8%	● -1%	● 3%	● 34%
8 DEVELOPMENTAL EDUCATION		benchmarks		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
		low	high						
9	Passing Rates of Students in Developmental Courses	75%	80%	● 74%	● 81%	● 78%	● 76%	● 85%	
10	Success Rate in Developmental Courses	50%	55%	● 54%	● 60%	● 57%	● 55%	● 57%	● 55%
11	Success Rate (Passing Rate) of Developmental Students in Subsequent College-Level Courses	80%	85%	● 86%	● 84%	● 83%	● 89%	● 91%	
12 WORKFORCE EDUCATION		benchmarks		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
		low	high						
13	Passing Rates on Licensure and Certification Examinations	80%	85%	● 80%	● 72%	● 71%	● 78%	● 78%	
14	Client Satisfaction with Customized Training	90%	95%	● 100%	● 100%	● 94%	● 92%	● 91%	
15	Growth in Curriculum Technical/Vocational FTE Generated	0%	2%	● -1%	● -12%	● 5%	● -8%	● 13%	● 13%
16	Growth in Occupational Extension FTE Generated	0%	2%	● 0.3%	● 5%	● 4%	● 7%	● 14%	● 16%
17	Growth in Curriculum Technical/Vocational Awards Given	0%	2%	● 17%	● -9%	● -14%	● -18%	● 35%	● 5%
18	Growth in Continuing Education Completions (Registrations)	0%	2%	● 6%	● 22%	● -0.3%	● 9%	● -0.1%	● 3%

19 TRANSFER EDUCATION		benchmarks low high		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
20	Performance of College Transfer Students	83%	88%	84%	63%	74%	86%	93%	
21	Growth in Curriculum Transfer FTE Generated	2%	4%	2%	-1%	2%	-1%	5%	12%
22	Growth in Curriculum College Transfer Awards	0%	5%	22%	25%	-36%	51%	-21%	31%
23 LIFELONG LEARNING		benchmarks low high		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
24	Growth in Attendance at Community Events Conducted	-5%	0%			-6%	-17%	-5%	5%
25	Growth in Dollars Awarded for Professional Development - SCC Foundation	-5%	0%					-73%	
26 ECONOMIC GROWTH		benchmarks low high		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
27	Growth in Special Industry Training FTE	0%	5%	57%	36%	27%	-21%	-53%	-43%
28	Columbus County Median Household Income as Percentage of State	75%	80%	68%	72%	73%	72%		
29	Growth in Columbus County Population	0%	2%	-0.5%	0.4%	0.1%	0.5%	-0.1%	
30	Columbus County Unemployment Rate	-7%	-5%	-6.4%	-5.6%	-5.4%	-7.5%	-12.4%	
31 SUPPORT OPERATIONS		benchmarks low high		2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
32	Growth in Volunteer Services Hours	-5%	0%		-10%	-1%	6%	-6%	4%
33	FTE and Financial Audit Exceptions	-2	-1		-1	-1	0	0	0
34	Growth in Budget Allocations - Federal, State, County, Other	-1%	1%	-2%	4%	3%	-1%	4%	24%
35	Growth in Budget Allocations - Federal	0%	5%	-10%	4%	0%	-19%	2%	73%
36	Growth in Budget Allocations - State	0%	5%	5%	5%	3%	6%	3%	6%

37	Growth in Budget Allocations - County	0%	5%	0%	2%	1%	0%	5%	0%
38	Growth in Budget Allocations - Other	0%	5%	-19%	2%	14%	6%	5%	18%
39	<b>RESOURCE DEVELOPMENT</b>	benchmarks low	high	<b>2004-2005</b>	<b>2005-2006</b>	<b>2006-2007</b>	<b>2007-2008</b>	<b>2008-2009</b>	<b>2009-2010</b>
40	Growth in Income from Auxiliary Services - Bookstore, Food Service, Vending	0%	2%	-72%	539%	18%	28%	71%	
41	Growth in Income from Live Project and Patron Fees	-1%	1%	4%	3%	5%	-9%	15%	
42	Growth in Total Income from Grants - Federal, State, Local, Private	-5%	0%	-3%	-3%	-9%	1%	14%	
43	Growth in Income from Grants - Federal	-5%	0%	-4%	-17%	-6%	-8%	40%	
44	Growth in Income from Grants - State	-5%	0%	2%	37%	-12%	-6%	-8%	
45	Growth in Income from Grants - Local	-5%	0%	0%	0%	8%	0%	2%	
46	Growth in Income from Grants - Private	-5%	0%	-36%	-66%	-100%	2042109900%	-68%	
47	Growth Rate of Self-Supporting Income - Summer, Curriculum	0%	5%			89%	26%		
48	<b>ACCESSIBLE, ATTRACTIVE AND CLEAN LEARNING ENVIRONMENT</b>	benchmarks low	high	<b>2004-2005</b>	<b>2005-2006</b>	<b>2006-2007</b>	<b>2007-2008</b>	<b>2008-2009</b>	<b>2009-2010</b>
49	Employee/Student Satisfaction on Survey Questions Related to Campus Appearance - Maintenance, Grounds, Safety/Security Survey	80%	90%				81%		83%
50	Employee/Student Satisfaction on Survey Questions Related to Cleanliness of Buildings and Restrooms	80%	90%				60%		73%
51	Proportion of Building Square Footage That is Accessible	95%	100%	94%	94%	94%	94%	95%	95%
52	<b>INCLUSION AND ACCESS</b>	benchmarks low	high	<b>2004-2005</b>	<b>2005-2006</b>	<b>2006-2007</b>	<b>2007-2008</b>	<b>2008-2009</b>	<b>2009-2010</b>
53	Difference in Proportional Enrollment of Students by Race/Ethnicity Compared to Service Area	-20%	-10%	-5%		-4%			
54	Difference in Proportional Race/Ethnicity of Faculty Compared to Service Area	-20%	-10%	-31%		-31%			

55	Difference in Proportional Race/Ethnicity of Leadership Compared to Service Area	-20%	-10%	-30%	-21%					
56	CCSSE - Diversity Focus Rating	1.5	2.5		2.6			2.6		
57	Difference in Proportional Enrollment of Students by Gender Compared to Service Area	-5%	0%	-7%						
58	Difference in Proportion of Gender of Faculty Compared to Service Area	-5%	0%	-8%	-6%					
59	Difference in Proportion of Gender of Leadership Compared to Service Area	-5%	0%	-15%	-5%					
60	<b>INSTITUTIONAL ADVANCEMENT</b>	<b>benchmarks</b>	<b>low</b>	<b>high</b>	<b>2004-2005</b>	<b>2005-2006</b>	<b>2006-2007</b>	<b>2007-2008</b>	<b>2008-2009</b>	<b>2009-2010</b>
61	Growth in Foundation Total Assets	0%	5%	11%	11%	10%	8%	90%	-15%	
62	Growth in Annual Public Support	0%	5%	95%	-34%	20%	74%	492%	-80%	
63	Growth in Advertising Budget Allocation	0%	2%		-9%	-18%	-13%	18%	-14%	
64	<b>TECHNOLOGY</b>	<b>benchmarks</b>	<b>low</b>	<b>high</b>	<b>2004-2005</b>	<b>2005-2006</b>	<b>2006-2007</b>	<b>2007-2008</b>	<b>2008-2009</b>	<b>2009-2010</b>
65	CCSSE Technology Skills Rating	1.5	2.5				3.13			3.10
66	Information Systems Audit Exceptions	-2	0	0	0	0	0	0	0	0
67	Employee Satisfaction with Technology at SCC	80%	90%				97%			
68	Growth in Distance Learning Course Offerings - Curriculum	-5%	0%	80%	-1%	21%	22%	31%	76%	

**Appendix B: Strategic Plan Section Relating to Developmental Education**

Critical Issue	Goal	Objectives
<p><b>Developmental Education/Underprepared Students</b></p> <p><i>Necessary to:</i></p> <ul style="list-style-type: none"> <li>➤ Deal with high remediation placement for high school students.</li> <li>➤ Deal with low developmental course success rates</li> <li>➤ Deal with high withdrawal rates in developmental courses</li> <li>➤ Deal with Increasing numbers of underprepared students coming to college</li> </ul>	<ol style="list-style-type: none"> <li><b>1. Increase success rate in developmental education courses.</b></li> <li><b>2. Increase success rate in first curriculum courses taken.</b></li> <li><b>3. Decreased placement rate in developmental courses.</b></li> </ol>	<p><b>As developmental mathematics is one of the first courses taken by curriculum students and is in the developmental education area the following objectives should result in meeting goals one and two. Involvement of area public schools in some objectives should also address goal three.</b></p> <ul style="list-style-type: none"> <li>➤ <b>OBJECTIVE A:</b> Under the direction of the Vice President of Student Development, develop and deploy an “Early Alert” system which may be used to direct developmental mathematics students to appropriate assistance, including the Academic Skills Lab by December 2011. This objective will have a first year cost of approximately \$18,000 and then an annual cost of approximately \$11,500.</li> <li>➤ <b>OBJECTIVE B:</b> Under the direction of the Vice President of Curriculum Instruction, advertise and hire a part-time “QEP Director” that will oversee efforts to improve student success in developmental mathematics by October 2011. (Position will be paired with another part-time position to create a full-time position) This objective will have a first year cost of</li> </ul>

<ul style="list-style-type: none"> <li>➤ Align with system emphasis on improving developmental education</li> </ul>		<p>approximately \$24,000 and then an annual cost of approximately \$35,000.</p> <ul style="list-style-type: none"> <li>➤ <b>OBJECTIVE C:</b> Under the direction of the Educational Development Committee, review and update advisement procedures and training related to developmental mathematics by October 2011. This objective will have a one-time cost of approximately \$6,000.</li> <li>➤ <b>OBJECTIVE D:</b> Under the direction of the Vice President of Curriculum Instruction, provide training to all advisors, developmental mathematics faculty and staff by December 2011. This objective will have a one-time cost of approximately \$12,000.</li> <li>➤ <b>OBJECTIVE E:</b> Under the direction of the Vice President of Curriculum Instruction, develop a modular mathematics curriculum which requires outcome mastery to proceed by April 2012. This objective will have a one-time cost of approximately \$5,500.</li> <li>➤ <b>OBJECTIVE F:</b> Under the direction of the Vice President of Student Development, develop/align a diagnostic mathematics test with the developed modules for student placement by April 2012. This objective will have a one-time cost of approximately \$1,000.</li> <li>➤ <b>OBJECTIVE G:</b> Under the direction of the Vice President of Student Development, begin diagnostic placement of developmental mathematics students into appropriate modules</li> </ul>
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		<p>by May 2012. This objective will have a first year cost of approximately \$13,000 with a recurring annual cost of approximately \$2,800.</p> <ul style="list-style-type: none"> <li>➤ <b>OBJECTIVE H:</b> Under the direction of the Vice President of Student Development, develop (or identify) life/work/study skills workshops for students to be delivered through JobLink or the Academic Skills Lab by May 2012.</li> <li>➤ <b>OBJECTIVE H:</b> Under the direction of the Vice President of Student Development, develop (or identify) life/work/study skills workshops for students to be delivered through JobLink or the Academic Skills Lab by May 2012.</li> <li>➤ <b>OBJECTIVE I:</b> Under the direction of the Vice President of Student Development, update the online college and web orientations by May 2012.</li> <li>➤ <b>OBJECTIVE J:</b> Under the direction of the Vice President of Technology Services, create a computer lab for use by developmental mathematics students as they progress through modules by July 2012. This objective will have a one-time cost of approximately \$60,000 and an annual recurring cost of approximately \$18,000 for part-time staffing by mathematics tutors.</li> <li>➤ <b>OBJECTIVE K:</b> Under the direction of the Vice President of Curriculum Instruction, develop and deliver training in use of the new modular developmental mathematics curriculum to all mathematics faculty by August 2012. This objective will have a one-time cost of approximately \$9,500.</li> </ul>
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		<ul style="list-style-type: none"> <li>➤ <b>OBJECTIVE L:</b> Under the direction of the Vice President of Curriculum Instruction, process for scheduling developmental mathematics faculty in the developmental mathematics computer lab and/or the academic skills lab for tutoring during non-classroom assigned hours by August 2012.</li>   <li>➤ <b>OBJECTIVE M:</b> Under the direction of the Vice President of Curriculum Instruction, develop and implement an annual “Pi Day” celebration by March 2013. This objective will have a recurring annual cost of approximately \$1,000.</li>   <li>➤ <b>OBJECTIVE N:</b> Under the direction of the Vice President of Curriculum Instruction, develop and implement an annual mathematics competition for students by May 2013. This objective will have a recurring annual cost of approximately \$500.</li>   <li>➤ <b>OBJECTIVE O:</b> Under the direction of the Vice President of Curriculum Instruction, evaluate progress toward meeting developmental mathematics outcomes by May 2013. This objective will have a recurring annual cost of approximately \$500.</li> </ul>
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## Appendix C1: Quality Enhancement Plan Survey - Board of Trustees Input

### IMPROVE ONLINE INSTRUCTION

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	25%	27%
3-Agree	75%	73%
2-Disagree	0%	0%
1-Strongly Disagree	0%	0%

A project in this area would significantly improve student retention and completion rates.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	10%	27%
3-Agree	80%	67%
2-Disagree	10%	6%
1-Strongly Disagree	0%	0%

The institution should devote significant resources to this project.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	0%	17%
3-Agree	78%	67%
2-Disagree	22%	15%
1-Strongly Disagree	0%	0%

This project would be appropriate to select for Southeastern's QEP.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	20%	22%
3-Agree	60%	65%
2-Disagree	20%	14%
1-Strongly Disagree	0%	0%

### NEW INSTRUCTIONAL TOOLS AND TECHNIQUES

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	40%	23%
3-Agree	60%	58%
2-Disagree	0%	19%
1-Strongly Disagree	0%	0%

A project in this area would significantly improve student retention and completion rates.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	0%	17%
3-Agree	67%	54%
2-Disagree	33%	29%
1-Strongly Disagree	0%	0%

The institution should devote significant resources to this project.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	10%	15%
3-Agree	70%	50%
2-Disagree	20%	35%
1-Strongly Disagree	0%	0%

This project would be appropriate to select for Southeastern's QEP.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	0%	16%
3-Agree	70%	44%
2-Disagree	30%	38%
1-Strongly Disagree	0%	2%

**NEW INSTRUCTIONAL TOOLS AND TECHNIQUES**

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	40%	23%
3-Agree	60%	58%
2-Disagree	0%	19%
1-Strongly Disagree	0%	0%

A project in this area would significantly improve student retention and completion rates.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	0%	17%
3-Agree	67%	54%
2-Disagree	33%	29%
1-Strongly Disagree	0%	0%

The institution should devote significant resources to this project.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	10%	15%
3-Agree	70%	50%
2-Disagree	20%	35%
1-Strongly Disagree	0%	0%

This project would be appropriate to select for Southeastern's QEP.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	0%	16%
3-Agree	70%	44%
2-Disagree	30%	38%
1-Strongly Disagree	0%	2%

**SUPER FIRST YEAR**

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	10%	28%
3-Agree	80%	62%
2-Disagree	10%	10%
1-Strongly Disagree	0%	0%

A project in this area would significantly improve student retention and completion rates.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	0%	24%
3-Agree	80%	64%
2-Disagree	20%	12%
1-Strongly Disagree	0%	0%

The institution should devote significant resources to this project.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	0%	22%
3-Agree	50%	52%
2-Disagree	50%	26%
1-Strongly Disagree	0%	0%

This project would be appropriate to select for Southeastern's QEP.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	0%	24%
3-Agree	60%	54%
2-Disagree	40%	22%
1-Strongly Disagree	0%	0%

**SEAMLESS TRANSITIONS**

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	10%	20%
3-Agree	90%	63%
2-Disagree	0%	18%
1-Strongly Disagree	0%	0%

A project in this area would significantly improve student retention and completion rates.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	0%	14%
3-Agree	80%	67%
2-Disagree	20%	20%
1-Strongly Disagree	0%	0%

The institution should devote significant resources to this project.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	0%	12%
3-Agree	70%	53%
2-Disagree	30%	35%
1-Strongly Disagree	0%	0%

This project would be appropriate to select for Southeastern's QEP.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	0%	12%
3-Agree	80%	53%
2-Disagree	20%	32%
1-Strongly Disagree	0%	4%

**IMPROVED DEVELOPMENTAL MATHEMATICS**

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	36%	53%
3-Agree	46%	43%
2-Disagree	18%	4%
1-Strongly Disagree	0%	0%

A project in this area would significantly improve student retention and completion rates.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	22%	51%
3-Agree	67%	45%
2-Disagree	11%	4%
1-Strongly Disagree	0%	0%

The institution should devote significant resources to this project.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	20%	48%
3-Agree	40%	44%
2-Disagree	40%	8%
1-Strongly Disagree	0%	0%

This project would be appropriate to select for Southeastern's QEP.		
Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	30%	51%
3-Agree	30%	37%
2-Disagree	40%	12%
1-Strongly Disagree	0%	0%

**ENHANCED INTERNET CONNECTIONS**

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.

Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	10%	28%
3-Agree	90%	51%
2-Disagree	0%	22%
1-Strongly Disagree	0%	0%

A project in this area would significantly improve student retention and completion rates.

Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	13%	12%
3-Agree	63%	53%
2-Disagree	25%	35%
1-Strongly Disagree	0%	0%

The institution should devote significant resources to this project.

Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	0%	12%
3-Agree	67%	43%
2-Disagree	33%	43%
1-Strongly Disagree	0%	2%

This project would be appropriate to select for Southeastern's QEP.

Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	10%	12%
3-Agree	60%	41%
2-Disagree	30%	45%
1-Strongly Disagree	0%	2%

**EARLY ALERT COMMUNICATIONS SYSTEM**

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.

Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	20%	28%
3-Agree	70%	54%
2-Disagree	10%	14%
1-Strongly Disagree	0%	4%

The institution should devote significant resources to this project.

Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	22%	26%
3-Agree	33%	54%
2-Disagree	33%	16%
1-Strongly Disagree	11%	4%

The institution should devote significant resources to this project.

Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	22%	16%
3-Agree	33%	50%
2-Disagree	33%	30%
1-Strongly Disagree	11%	4%

This project would be appropriate to select for Southeastern's QEP.

Answer Options	Board of Trustees	Faculty or Staff
4-Strongly Agree	20%	23%
3-Agree	50%	46%
2-Disagree	30%	27%
1-Strongly Disagree	0%	4%

## Appendix C2: Quality Enhancement Plan Survey - Student Government Association Input

### IMPROVE ONLINE INSTUCTION

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	25.0%	2
3-Agree	75.0%	6
2-Disagree	0.0%	0
1-Strongly Disagree	0.0%	0

A project in this area would significantly improve student retention and completion rates.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	10.0%	1
3-Agree	80.0%	8
2-Disagree	10.0%	1
1-Strongly Disagree	0.0%	0

The institution should devote significant resources to this project.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	0.0%	0
3-Agree	77.8%	7
2-Disagree	22.2%	2
1-Strongly Disagree	0.0%	0

This project would be appropriate to select for Southeastern's QEP.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	20.0%	2
3-Agree	60.0%	6
2-Disagree	20.0%	2
1-Strongly Disagree	0.0%	0

**NEW INSTRUCTIONAL TOOLS AND TECHNIQUES**

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	40.0%	4
3-Agree	60.0%	6
2-Disagree	0.0%	0
1-Strongly Disagree	0.0%	0

A project in this area would significantly improve student retention and completion rates.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	0.0%	0
3-Agree	66.7%	6
2-Disagree	33.3%	3
1-Strongly Disagree	0.0%	0

The institution should devote significant resources to this project.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	10.0%	1
3-Agree	70.0%	7
2-Disagree	20.0%	2
1-Strongly Disagree	0.0%	0

This project would be appropriate to select for Southeastern's QEP.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	0.0%	0
3-Agree	70.0%	7
2-Disagree	30.0%	3
1-Strongly Disagree	0.0%	0

**SUPER FIRST YEAR**

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	10.0%	1
3-Agree	80.0%	8
2-Disagree	10.0%	1
1-Strongly Disagree	0.0%	0

A project in this area would significantly improve student retention and completion rates.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	0.0%	0
3-Agree	80.0%	8
2-Disagree	20.0%	2
1-Strongly Disagree	0.0%	0

The institution should devote significant resources to this project.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	0.0%	0
3-Agree	50.0%	5
2-Disagree	50.0%	5
1-Strongly Disagree	0.0%	0

This project would be appropriate to select for Southeastern's QEP.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	0.0%	0
3-Agree	60.0%	6
2-Disagree	40.0%	4
1-Strongly Disagree	0.0%	0

**SEAMLESS TRANSITIONS**

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	10.0%	1
3-Agree	90.0%	9
2-Disagree	0.0%	0
1-Strongly Disagree	0.0%	0

A project in this area would significantly improve student retention and completion rates.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	0.0%	0
3-Agree	80.0%	8
2-Disagree	20.0%	2
1-Strongly Disagree	0.0%	0

The institution should devote significant resources to this project.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	0.0%	0
3-Agree	70.0%	7
2-Disagree	30.0%	3
1-Strongly Disagree	0.0%	0

This project would be appropriate to select for Southeastern's QEP.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	0.0%	0
3-Agree	80.0%	8
2-Disagree	20.0%	2
1-Strongly Disagree	0.0%	0

**IMPROVED DEVELOPMENTAL  
MATHEMATICS**

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.

Answer Options	Response Percent	Response Count
4-Strongly Agree	36.4%	4
3-Agree	45.5%	5
2-Disagree	18.2%	2
1-Strongly Disagree	0.0%	0

A project in this area would significantly improve student retention and completion rates.

Answer Options	Response Percent	Response Count
4-Strongly Agree	22.2%	2
3-Agree	66.7%	6
2-Disagree	11.1%	1
1-Strongly Disagree	0.0%	0

The institution should devote significant resources to this project.

Answer Options	Response Percent	Response Count
4-Strongly Agree	20.0%	2
3-Agree	40.0%	4
2-Disagree	40.0%	4
1-Strongly Disagree	0.0%	0

This project would be appropriate to select for Southeastern's QEP.

Answer Options	Response Percent	Response Count
4-Strongly Agree	30.0%	3
3-Agree	30.0%	3
2-Disagree	40.0%	4
1-Strongly Disagree	0.0%	0

**ENHANCED INTERNET CONNECTIONS**

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	10.0%	1
3-Agree	90.0%	9
2-Disagree	0.0%	0
1-Strongly Disagree	0.0%	0

A project in this area would significantly improve student retention and completion rates.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	12.5%	1
3-Agree	62.5%	5
2-Disagree	25.0%	2
1-Strongly Disagree	0.0%	0

The institution should devote significant resources to this project.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	0.0%	0
3-Agree	66.7%	6
2-Disagree	33.3%	3
1-Strongly Disagree	0.0%	0

This project would be appropriate to select for Southeastern's QEP.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	10.0%	1
3-Agree	60.0%	6
2-Disagree	30.0%	3
1-Strongly Disagree	0.0%	0

**EARLY ALERT COMMUNICATIONS SYSTEM**

A project in this area focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	20.0%	2
3-Agree	70.0%	7
2-Disagree	10.0%	1
1-Strongly Disagree	0.0%	0

The institution should devote significant resources to this project.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	22.2%	2
3-Agree	33.3%	3
2-Disagree	33.3%	3
1-Strongly Disagree	11.1%	1

The institution should devote significant resources to this project.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	22.2%	2
3-Agree	33.3%	3
2-Disagree	33.3%	3
1-Strongly Disagree	11.1%	1

This project would be appropriate to select for Southeastern's QEP.		
Answer Options	Response Percent	Response Count
4-Strongly Agree	20.0%	2
3-Agree	50.0%	5
2-Disagree	30.0%	3
1-Strongly Disagree	0.0%	0

### Appendix C3: Quality Enhancement Plan Survey - Student Body Input

Developmental Mathematics – Most students start college needing to sign up for some kind of developmental mathematics. But it’s probably the hardest subject a student can take at SCC. Student who make it through their mathematics courses tend to make it all the way through the rest of their courses. We want all students to have the very best chance to learn in these classes so a mathematics project would work on the ways to help more students be able to do that in less time.

Answer Options	Most Important	Important	Less Important	Not Important	Response Count
	97	157	25	11	290
	33%	54%	9%	4%	100%

Online Instruction – Taking online courses is convenient for a lot of students. So more people are signing up for courses that have online learning than ever before. But sometimes it’s harder to learn online than sitting in a classroom because of the technology. We want all students to have the very best chance to pass online courses, so a project in online instruction would work on helping students learn their material and turn in assignments with computers.

Answer Options	Most Important	Important	Less Important	Not Important	Response Count
	120	131	29	10	290
	41%	45%	10%	3%	100%

First Year Experience – The first year in college is very exciting and challenging. But sometimes there are so many things for a student to focus on that it’s hard to work out how to learn all the course material, turn in assignments, and how to pay for things and get books and where to get help when you need it. We want all students to have a great first year experience so a project on the first year experience would help students make it through the first year and come back for more semesters and to finish their program.

Answer Options	Most Important	Important	Less Important	Not Important	Response Count
	138	112	33	7	290
	48%	39%	11%	2%	100%

## Appendix D: Assessment Methodologies for Outcomes

### Outcome #1

Datatel and NCCCS Data Warehouse were used to identify the following:

- Fall enrollments for cohort
- First registration term
- Non-transitional program codes
- Social security numbers (SSN) (unique identifier)
- Seven digit program codes
- Developmental Education Mathematics (DevEd MAT) courses taken first two terms
- No NA grades (never attended)
- Transfer status
- Non-course (NC) credits
- 

Southeastern Community College Catalog used to determine the following:

- Developmental education mathematics credit required, by program code

Excel Used to merge and sort for the following:

- Seven digit Datatel program code matched to North Carolina Community College System program codes, by social security numbers
- DevEd MAT courses taken, compared to courses required, by program code
- Transfer students identified and removed from cohort
- Non-course credits compared to DevEd MAT required, and taken, by program code

**Resulting Excel document shows the size of the qualified cohort by SSN, Local Program Code, DevEd MAT required, DevEd taken or NC credit earned, and delineates whether the student has missed taking the required DevEd MAT in their first two semesters.**

**Success is counted as the proportion of the fall cohort required to complete DevEd MAT which showed actual enrollment or NC credit, for required DevEd MAT within first two semesters of their first registration.**

### Outcome #2

NCCCS Data Warehouse was used to identify the following:

- Students enrolled in MAT 60, 70 and 80 - by term
- Grades A, B, C, F, W

**Resulting Excel document shows enrollments by grade and percentage of students passing by term.**

**A second spreadsheet shows, for those students with A-C grades, the number of prior attempts.**

### **Outcome #3**

Datatel and NCCCS Data Warehouse were used to identify the following:

- Fall enrollments for cohort
- First registration term
- Non-transitional program codes
- Social security numbers (SSN) (unique identifier)
- Seven digit program codes
- Developmental Education Mathematics (DevEd MAT) courses taken first year
- No NA grades (never attended)
- Grades by A, B, C, F, W for DevEd MAT
- Transfer status
- Non-course (NC) credits

Southeastern Community College Catalog used to determine the following:

- Developmental education mathematics credit required, by program code

Excel Used to merge and sort for the following:

- Seven digit Datatel program code matched to North Carolina Community College System program codes, by social security numbers
- DevEd MAT courses taken, compared to courses required, by program code
- Transfer students identified and removed from cohort
- Non-course credits compared to DevEd MAT required, and taken, by program code

**Resulting Excel document shows the size of the qualified cohort by SSN, Local Program Code, DevEd MAT required, DevEd taken or NC credit earned, and delineates whether the student has completed all required DevEd MAT in their first year.**

**Success is counted as the proportion of the cohort completing the required DevEd MAT sequence within the first year.**

### **Outcome 4a**

Methodology for survey to assess of confidence of students in pursuing college-level mathematics and mathematics-related courses to be determined during fall 2011.

**Outcome #4b**

Cohort as in Outcome #1

Datatel and NCCCS Data Warehouse were used to identify the following:

- Completion of DevEd MAT (A-C grades)
  - Developmental Education Mathematics (DevEd MAT) enrollments
  - A-C grades by SSN
- General Education Quantitative Literacy enrollments (non-NA grades) by SSN in year following DevEd MAT completion

Excel Used to merge DevEd A-C grades and GenEd Quantitative Literacy enrollments and sort for the following:

- SSN's by A-C grades matched to SSN's for GenEd Quantitative Literacy courses taken in year following

**Resulting Excel document shows completers of DevEd MAT in cohort which enrolled in GenEd Quantitative Literacy courses in year following completion.**

**Success is counted as the proportion of the cohort required to complete DevEd MAT which completed DevEd MAT and subsequently enrolled in Quantitative Literacy course during the year following.**

**Outcome #5**

Cohort as in Outcome #1

Datatel and NCCCS Data Warehouse were used to identify the following:

- Completion of DevEd MAT (A-C grades)
  - Developmental Education Mathematics (DevEd MAT) enrollments
  - A-C grades by SSN
- General Education Quantitative Literacy enrollments (non-NA grades) by SSN in year following DevEd MAT completion
- A, B, C, D, F, W grades for GenEd Quantitative Literacy enrollments

Excel Used to merge and sort for the following:

Students in cohort completing DevEd MAT

Students enrolling in GenEd Quantitative literacy

Students with passing grades (A, B, C, D) in GenEd Quantitative Literacy

**Resulting Excel document shows completers of DevEd MAT in cohort which enrolled in GenEd Quantitative Literacy courses in year following completion and received A-D grades.**

**Success is counted as the proportion of the cohort which was required to complete DevEd MAT which subsequently completed DevEd MAT and enrolled in the required General Education Quantitative Literacy course during the year following, and passed the course.**