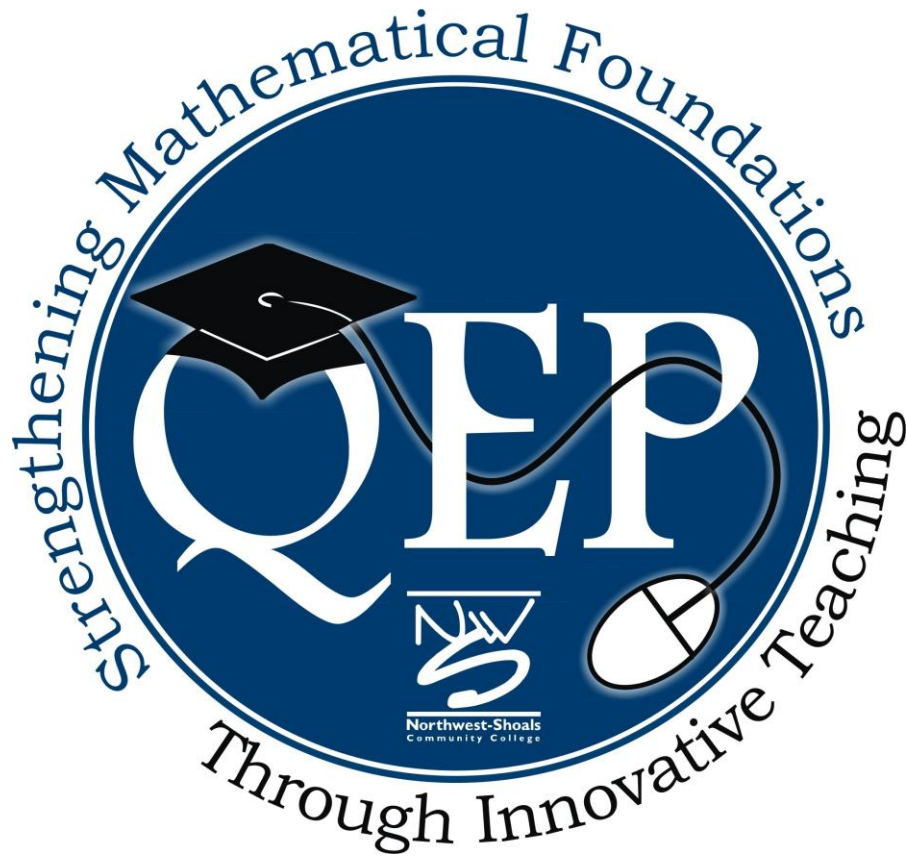


Northwest-Shoals Community College
Quality Enhancement Plan



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

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Strengthening Mathematical Foundations Through Innovative Teaching

A Quality Enhancement Plan (QEP) for Northwest-Shoals Community College

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EXECUTIVE SUMMARY

The purpose of the Northwest-Shoals Community College (NW-SCC) Quality Enhancement Plan (QEP), Strengthening Mathematical Foundations Through Innovative Teaching, is to increase student learning by creating a best practices environment of teaching and by equipping faculty with the knowledge, skills, and abilities to engage students in active learning. The framework and focus of this plan will be integrated into the developmental math program. As ideas are piloted and proven successful, it is believed that innovative teaching methods can be replicated into other areas of the curriculum; therefore, professional development opportunities related to innovative teaching strategies and student learning will be afforded to all faculty.

This plan is an outgrowth of conversations between College constituencies, faculty, administration, staff, and students. As a result of these conversations, a number of issues were identified as worthy of consideration; however, as the issues were narrowed, *innovative teaching* emerged as the focal point to improve student learning. One of the initiatives of the most recent NW-SCC Strategic Plan was to move toward becoming a learning-centered college; therefore, the concept of innovative teaching seemed an ideal means to begin to accomplish the initiative of a learning-centered college. Ultimately, faculty, staff, students, community and administration established consensus that the project was relevant and achievable.

In addition to the gathering of substantive input from the College community at large, the components of the plan are derived from a study of the

literature regarding innovative teaching strategies, specifically those used in the area of developmental math, and from a review of educational best practices that promote active and engaged learning. Essential to the overall project is an assessment plan that uses multiple measures of learning outcomes associated with innovative teaching methods compared to traditional teaching methods. Assessment of student learning gains *within* courses will also be conducted. In addition, the students' perceptions regarding their attitudes toward math will be assessed.

Actions which are required to execute, assess and revise the plan will be woven into the College's existing comprehensive planning and evaluation procedures. The plan consists of two goals:

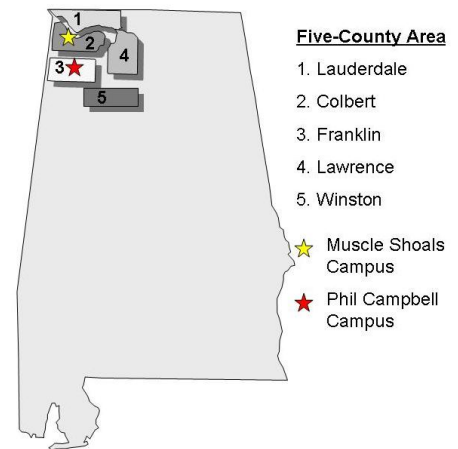
Goal 1: To increase student learning in developmental math courses by redesigning courses to include innovative and engaging teaching strategies.

Goal 2: To improve faculty knowledge, skills, and use of innovative pedagogy as learning facilitators by providing additional professional development opportunities.

Identified outcomes are linked to each goal to guide the implementation of the project.

INTRODUCTION TO THE COLLEGE AND ITS COMMUNITY

Northwest-Shoals Community College is a comprehensive two-year public institution of higher learning. The College's mission is to provide vocational, technical, academic and lifelong educational opportunities; promote economic growth; and enhance the quality of life for the people of Northwest Alabama. The College serves Colbert, Franklin, Lauderdale, Lawrence and Winston counties within the Northwest Region of the state. The College operates two campuses – the Shoals campus in Muscle Shoals and the Phil Campbell Campus in Phil Campbell.



The population of these five counties is 232,450 (U.S. Census Bureau, 2006 State and County estimates). The Shoals campus lies in the upper northwest corner of Alabama in the middle of four cities known as “The Shoals” (Florence, Muscle Shoals, Sheffield, and Tusculmbia) and nine smaller towns within 1,425 square miles of two northwest Alabama counties: Colbert and Lauderdale. The population of “The Shoals” is more than 65,000, and the Florence Metropolitan Statistical Area includes 143,000 persons – more than half of the entire designated service area (Shoals Chamber of Commerce, September 2007). The Shoals campus is an easy ten-minute commute from the downtown section of each of the cities. The Phil Campbell campus lies in a rural area of the Appalachian foothills in Franklin County and is located approximately 30 miles

south of the Shoals campus. It is easily accessible from either U.S. Highway 43 or Alabama Highway 5/AL Hwy 13. The population of Franklin County is 31,223 with 72% percent of the population rural (U.S. Census 2000, Urban and Rural Population in Alabama Counties).

The average unemployment rate for the five counties is 5% compared to 3.7% for the state of Alabama (Alabama Department of Industrial Relations, Labor Market Division - July 2007). This rate means that 11,623 persons in the College's service area in Alabama are unemployed and many more are under-employed with need for upgraded skills or retraining. Other relevant socio-economic data show that the average per capita income in the College service area is \$16,645 while the Alabama average is \$18,189. Thirty-two percent (32%) of adults in the service area have less than a high school diploma or GED. The percentage of all ages living below poverty level in the service area is 16.1%. The demographics of the population in the area are 85.5% - Caucasian, 8.7% - Black, 3.3% - Hispanic and 2.5% - All Others (U.S. Census Bureau, Estimates for Alabama Counties, 2004).

The Phil Campbell Campus, founded in 1963 as Northwest Alabama State Junior College, provides access to postsecondary education for citizens of the rural counties of Northwest Alabama. This campus was the first public junior college in what was to become the Alabama College System and was first accredited by the Commission on Colleges of the Southern Association of Colleges and Schools in 1967. The Shoals Campus, founded in 1966 as Joe Wheeler State Trade School, provided occupational and technical training. In

1989 the Alabama State Board of Education created Northwest Alabama Community College through the consolidation of Northwest Alabama State Junior College in Phil Campbell and Northwest Alabama State Technical College in Hamilton. Shoals Community College was created through the consolidation of Muscle Shoals State Technical College and the Tuscumbia Campus of Northwest Alabama State Junior College. The Commission on Colleges of the Southern Association of Colleges and Schools granted accreditation to Northwest Alabama Community College in 1990. Shoals Community College received its accreditation in 1991. In 1993, Northwest-Shoals Community College was formed by the Alabama State Board of Education through the merger of Northwest Alabama Community College's Phil Campbell Campus and Shoals Community College. The merger was enacted to provide more effective and efficient educational services to residents of rural northwest Alabama and the Shoals area. This merger also provided business and industry with a single focal point for addressing educational and training needs and provided a single workforce development center to assist communities with economic development activities. Reaffirmation of accreditation was granted by SACS in December, 1999. Northwest-Shoals Community College, composed of two campuses, has adequate physical facilities to support an environment in which academic, social, physical and emotional development may be fostered.

Northwest-Shoals Community College had a headcount of 3,491 credit students during the fall semester 2006 on the following campuses: 2,570 students on the Shoals Campus, 626 on the Phil Campbell Campus, 150 in

Distance Education, and 161 in all other dual enrollment sites within the service area of the College with 16 withdrawn students. There were 231 graduates in the spring 2007. The total headcount for fall 2007 was 3,691 credit students on the following campuses: 2,528 on the Shoals Campus, 608 on the Phil Campbell Campus, 203 in Distance Education, and 369 in all other dual enrollment sites within the service area of the College with 17 withdrawn students (Institutional Research and Planning Office 01-15-07, PERS Report)

BROAD-BASED INVOLVEMENT TO DEVELOP THE QEP

In January 2006, during the spring semester in-service meeting of all College personnel, the NW-SCC SACS Leadership Team made an appeal for volunteers to assist in the SACS reaffirmation efforts of the College. Twenty-five College employees volunteered.

SACS Leadership Team

<i>Dr. Timmy James, Chair</i>	<i>Assistant Dean of Instruction, Phil Campbell Campus</i>
<i>Jenny Byram*</i>	
<i>Dr. Glenda Colagross,</i>	<i>Vice President of Instruction, Institutional Effectiveness, and Development</i>
<i>Pam Townsend</i>	<i>Director of Human Resources</i>
<i>Dr. Humphrey Lee</i>	<i>President</i>
<i>Bret McGill</i>	<i>Assistant Dean of Instruction, Muscle Shoals Campus</i>
<i>John McIntosh</i>	<i>Director of Institutional Research</i>
<i>Paul Merrill</i>	<i>Chief Fiscal Officer</i>
<i>Dianne Pace</i>	<i>Director of the Child Development Center, Grants Development/External Funding, Child Development Instructor</i>
<i>Charles Taylor</i>	<i>Associate Dean of Students</i>
<i>Rachel Trapp</i>	<i>Head Librarian</i>
<i>C. T. Wilson*</i>	

*No longer employed with the college

Nineteen, from the initial group of twenty-five, were selected to serve on a QEP Planning Team to identify potential QEP topics, make recommendations to the SACS Leadership Team, and eventually develop and write the QEP.

QEP Planning Team

<i>John McIntosh, Co-Chair</i>	<i>Director of Institutional Research</i>
<i>Dianne Pace, Co-Chair</i>	<i>Director of the Child Development Center, Grants Development/External Funding, Child Development Instructor</i>
<i>Joan Baltes</i>	<i>Economics Instructor</i>
<i>Jim Bonner*</i>	<i>Electricity Instructor</i>
<i>Ken Brackins</i>	<i>Psychology Instructor</i>
<i>Dr. Glenda Colagross</i>	<i>Vice President of Instruction, Institutional Effectiveness, and Development</i>
<i>Dr. Carole Dabbs</i>	<i>Nursing Instructor</i>
<i>Dr. Bob England*</i>	<i>History Instructor</i>
<i>Joe Hackworth*</i>	<i>Director of Maintenance, Occupational/Technical Division Chair</i>
<i>Dr. Timmy James</i>	<i>Assistant Dean of Instruction, Phil Campbell Campus</i>
<i>Janet Jones</i>	<i>Director of Accounting</i>
<i>Rose Jones</i>	<i>Biology Instructor, Science Department Head</i>
<i>Ginger Long</i>	<i>Developmental Education Director, English/Speech Instructor, Humanities/Fine Arts Chair</i>
<i>Ann Lyndon</i>	<i>Director of Student Support Services, Math Instructor</i>
<i>Bret McGill</i>	<i>Assistant Dean of Instruction, Muscle Shoals Campus</i>
<i>Kim Miller</i>	<i>Manager – Fitness Center</i>
<i>Eric Reid*</i>	<i>Auto Body Instructor</i>
<i>Kim Ricketts</i>	<i>Math Instructor</i>
<i>Dr. Craig Sockwell</i>	<i>Chemistry Instructor</i>
<i>Brad Thompson**</i>	<i>Math Instructor</i>

*Resigned from committee

**Added to committee

This group was composed of eight faculty members, four administrators, three department or division chairs, two staff members, and two program directors.

Both academic and occupational/technical faculty were represented on the committee. Mr. John McIntosh, Director of Institutional Research, and Ms.

Dianne Pace, Director of the Child Development Center, Grants

Development/External Funding, and faculty member, were named to co-chair the QEP committee. Both also served as members of the NW-SCC SACS Leadership Team to ensure that the directions and activities of the QEP Planning Team were consistent with the vision of the SACS Leadership Team. The guidance from the SACS Leadership Team to the QEP Planning Team was to identify potential topics that were clearly important to the College and to student learning. The teams were interested in considering a broad range of topics and in understanding the concerns of various College constituencies.

<p style="text-align: center;">PHASE 1 Initial Planning</p> <p>Called for Volunteers to assist with SACS Reaffirmation efforts 19 Volunteers chose to work on QEP Reviewed Strategic Plan & Other QEP's Developed QEP Website</p>												
2006	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	<p>Focus Group Subcommittee began work</p> <p>Focus Group Subcommittee met with STUDENTS, FACULTY, STAFF, and ALUMNI</p> <p>Dr. Lee called for QEP topic suggestions</p> <p>Entire College Community was surveyed regarding QEP topics</p> <p>Submitted QEP topics were categorized</p>											

The QEP Planning Team used a variety of approaches to achieve broad-based involvement for identification of potential topics for the QEP. The first

source of information reviewed by the QEP Planning Team was the NW-SCC Strategic Plan. The plan, completed in January 2006, identified six separate strategic initiatives. Another source of information was Quality Enhancement Plans from other colleges. Quality Enhancement Plans that included both two-year and four-year institutions were compiled and reviewed by the QEP Planning Team. An additional method for QEP topic identification and broad-based involvement was the use of focus groups. A Focus Group Subcommittee of six QEP Planning Team members was assigned the task of setting procedures for the focus groups, including the format, questions and/or topics to elicit information regarding student learning, and conducting the focus groups.

Focus Group Subcommittee

Dianne Pace, Chair
Ken Brackins
Jim Bonner
Dr. Carole Dabbs
Joe Hackworth
Ginger Long

This subcommittee met on several occasions to work out the details and procedures for the focus groups. This subcommittee then set up focus group meetings with students, faculty, staff, and alumni. The QEP Planning Team also developed a [website](#) to provide general information about the QEP. As a part of this website, there was [an online suggestion box](#) that allowed any member of the College community to submit an idea for the QEP. All College personnel were notified about this option. First, Dr. Humphrey Lee, President of the College, sent out a campus-wide memo (Appendix A) on July 5, 2006, to the entire College community inviting all College personnel to participate in forming a QEP

topic by submitting ideas regarding a QEP. Second, the request for ideas for a QEP topic was reiterated at a College-wide in-service meeting on August 17, 2006. In all, over 200 responses were received regarding QEP topic ideas. All responses were reviewed by the Feedback Subcommittee and categorized under the following eight categories and suggested topics:

- Critical Thinking
 - Critical Thinking Across the Curriculum: A Key to Student Learning and Success
- Developmental Education
 - Successful Learning From Every Angle: M**A**th, E**N**glish, Readi**N**G, Learning Success Center, and Coll**E**ge Success
- Distance Education
 - Overcoming Time, Location, and Delivery Barriers to Learning: A Strategic Plan for Innovative Distance Learning
- Humanities and Arts
 - Fostering a Scholarly Community: Rediscovering the Value of Arts and Humanities for Students and Area Residents
- Innovation for Teaching
 - Where Instructors Teach and Students Learn: A Strategic Plan for Student Learning and Scholarship Through Innovative Teaching
- Student/Faculty Engagement
 - Improving Student Learning Via Faculty and Student Engagement
- Student Services

- Improving Student Success and Retention by Student Interaction with Orientation, Advising, and Tutoring
- Technology
 - NW-SCC on the Cutting Edge: Communication and Technology Across the Curriculum

Feedback Subcommittee

Joan Baltes, Chair
Janet Jones
Rose Jones
Eric Reid
Dr. Craig Sockwell

The Planning Team decided to survey the entire College community at the January 2, 2007, in-service meeting to get a sense of the perceived importance of the potential topics and to encourage, yet again, individuals to suggest other topics that they deemed important that may have been overlooked (Appendix B). The questionnaire instructions directed respondents to decide how important each of the themes was for consideration as a QEP topic. Respondents were asked to rank the choices in order from most important to least important. There were 91 responses to the survey. All College personnel groups were well represented, and over half of the respondents were faculty. The largest number of “most important” rankings addressed innovation for teaching. This area also received the smallest number of “least important” rankings (Appendix C). No new themes resulted from the request for additional topic suggestions.

Survey Instrument Subcommittee

Dr. Craig Sockwell, Chair
Joan Baltes
Dr. Bob England
Ann Lyndon
Bret McGill

Phase 2 QEP Topic Selection						
<p>Determined how well topics meet established standards</p> <p>Innovative Teaching emerged as the topic focus</p> <p>Developmental Education also had strong support as topic</p> <p>Topic submitted to SACS Leadership Team and President's Council</p>						
2007	Jan	Feb	Mar	Apr	May	Jun
<p>Reviewed Research related to innovative teaching</p> <p>Reviewed Research related to developmental education</p> <p>Reviewed how the topic fit into the college's philosophy and mission</p> <p>Assigned QEP Design Team</p>						

The QEP Planning Team reviewed the results of all the ideas, suggestions, and surveys to determine the best course of action for the QEP. The decision was made that innovative teaching was an important topic to student learning and the goals of the College. This topic met the initiatives resulting from the strategic plan of the Learning College concept and faculty

development; however, the specific area of focus for innovative teaching was an issue to be resolved, and innovative teaching, in and of itself, was too broad a topic for College-wide implementation. Since developmental education had been one of the recurring themes from the many avenues of QEP topic suggestions, and there were issues regarding student success in the developmental area, the team agreed that the developmental program would be an ideal area to improve student learning through innovative teaching. Initially, all areas of the developmental education program were considered to be relevant to the QEP; however, after further consideration, the team believed it was prudent to narrow the focus of the project to only one area. Mathematics has proven to be the area that presents students the most difficulty in reaching their academic goals. Additionally, more than 70% of new students are required to take a developmental mathematics course as compared to 19% required to take English and 9% required to take reading. Thus, the committee decided that math was the best choice for the QEP. This topic area was then presented to the SACS Leadership Team as well as to the President's Extended Cabinet. These two groups agreed that innovative teaching in the area of developmental math is clearly important to the College and student learning. A QEP design team was assigned from among the original list of volunteers to develop and write a plan which addressed the needs of NW-SCC's student learners. Those selected had experience in developmental education, pedagogy, and/or math instruction.

QEP Design Team

<i>Ginger Long</i>	<i>Developmental Education Director, English/Speech Instructor, Humanities/Fine Arts Chair</i>
<i>John McIntosh</i>	<i>Director of Institutional Research</i>
<i>Dianne Pace</i>	<i>Director of the Child Development Center, Grants Development/External Funding, Child Development Instructor</i>
<i>Kim Ricketts</i>	<i>Math Instructor</i>

DATA ANALYSIS OF STUDENTS IN DEVELOPMENTAL MATH

A number of researchers have studied the effects of developmental courses on student success. Boylan and Saxon (1999) performed a thorough review of the literature related to Outcomes of Remediation. After review, they conclude that successful remediation should meet the following criteria:

- Students who complete remedial requirements do so within a reasonable period of time
- Students who complete remedial courses also pass college-level courses in the same or similar subject areas
- Students who successfully complete remedial courses achieve GPA's comparable to students who were not required to take remedial courses.
- Students who took remedial courses were retained over time.

Further, they report statistics from the 1992 National Study of Developmental Education which support that students who complete remedial courses with a "C" grade or better were likely to complete their first college-level course.

Specifically, 77% of remedial math students who achieved a "C" passed a subsequent college-level math course; however, this percentage appears

artificially high as the authors point out that “in order to be counted in these figures, students had to complete their remedial course with a ‘C’ or better and have enrolled in a college-level course in the same or related subject” (p.8). This 77% figure does not take into account the generally high dropout rate in developmental courses which the authors state is approximately 40%.

The overarching purpose of developmental courses is to enhance learners’ skill levels in order to increase their chance for success in college-level coursework. This purpose can be measured by longitudinal tracking of student success in developmental courses through the first college-level course in that same subject area. For example, at Northwest-Shoals Community College, when a student places in developmental math (MTH 090), earns a grade of “C” or better, and continues on to successfully complete Elementary Algebra (MTH 098) and College Algebra (MTH 100), the developmental math courses have achieved what they were designed to achieve; however, as Boylan and Saxon point out, with no accounting for students who failed or withdrew from the original developmental math course, the interpretation of such data is suspect; therefore, there will be a stricter analysis of Northwest-Shoals data to compare the number who enrolled in developmental math courses with the number who went on to successfully complete their first college-level math course. Five cohorts from each fall semester, 2002, 2003, 2004, 2005, and 2006, were followed through the spring semester of 2008.

Table 1 shows the 2002, 2003, 2004, 2005, and 2006 cohorts of students who placed in the first developmental math course, MTH 090, as well as the number who went on to successfully complete the first college-level math course.

Table 1: Success Rate of MTH 090 Students in College-level Math

	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Total
Students enrolled who placed in MTH 090	222	223	180	146	142	913
C or better in MTH 090	130	136	104	81	81	532
C or better in MTH 098	61	52	41	28	25	207
C or better in MTH 100 or MTH 116	51	61	52	26	24	214
Success Rate (C or better)	23%	27%	29%	18%	17%	23%

Success rate is determined by a ratio between the number who enrolled in MTH 090 and the number who successfully completed either MTH 116 or MTH 100.

$$\text{SUCCESS RATE(SR)} = \frac{\text{NUMBER SUCCESSFUL COMPLETERS MTH 100 OR MTH 116 (SC)}}{\text{NUMBER THAT ENROLLED IN MTH 090 (NE)}}$$

The data in Table 1 shows that, over the five-year period, 913 students enrolled in MTH 090 and 214 went on to successfully complete MTH 116 or 100 with a C or better. This resulted in a 23% success rate for MTH 090 students.

Table 2 shows the number of students who enrolled in MTH 098, made a “C” or better, and then successfully completed MTH 100 or MTH 116.

Table 2: Success Rate of MTH 098 Students in College-level Math

	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Total
Students enrolled who placed in MTH 098	468	403	409	322	353	1955
C or better in MTH 098	287	236	237	184	182	1126
C or better in MTH 100 or MTH 116	214	175	171	113	127	800
Success Rate (C or better)	46%	43%	42%	35%	36%	41%

It is not surprising that students who begin in MTH 098 are more likely to have success in MTH 100 and MTH 116 because they begin with a higher skill level.

In addition to improving student success rates in college-level coursework, the QEP team also focused on the corresponding student retention. These data were reviewed as well. Table 3 shows the 2002, 2003, 2004, 2005, and 2006 cohorts of students who placed in the first developmental math course, MTH 090, and the retention rate of these students.

Table 3: **Retention Rate of MTH 090 Students**

	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Total
Students enrolled who placed in MTH 090	222	223	180	146	142	913
C or better in MTH 090 who enrolled in MTH 098 or MTH 116	100	104	89	60	62	415
Below C in MTH 090 who eventually enrolled in MTH 098 or MTH 116	31	22	19	13	14	99
Students who did not return	91	97	72	73	66	399
% of Students retained	59%	57%	60%	50%	54%	56%

It should be noted that students who successfully complete MTH 090 are eligible to enroll in MTH 116.

Table 4 shows the students who placed into MTH 098 and the rate of students who were retained.

Table 4: **Retention Rate of MTH 098 Students**

	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Total
Students enrolled who placed in MTH 098	468	403	409	322	353	1955
C or better in MTH 098 who enrolled in MTH 100 or MTH 116	245	205	199	151	156	956

Below C in MTH 098 who eventually enrolled in MTH 100 or MTH 116	60	57	48	28	33	226
Students who did not return	163	141	162	143	164	773
% of Students retained	65%	65%	60%	56%	54%	60%

The dropout rates, as reported in table 5, for students enrolled in MTH 090 and MTH 098 at Northwest-Shoals are approximately 25% higher than developmental student dropout rates reported by Boylan and Saxon (1999).

Implications of the Data:

Analysis of the data reveals that a student at Northwest-Shoals who begins in MTH 090 has a 1 in 5 chance of success in a college-level math course whereas a student who begins in MTH 098 has a 2 in 5 chance of success in a college-level math course. Students who made multiple attempts and eventually earned a “C” were counted only as a success; they were not duplicated in the calculations. Failure to progress through the developmental math courses represents a formidable barrier for students to complete a program of study. The first college-level math course for students who begin in developmental courses is either MTH 116 or MTH 100. For a number of students, MTH 116 or MTH 100 is the only college-level course required; however, for students who hope to complete transfer programs, MTH 110 or MTH 112 poses an even greater barrier. There is no denying that the skill level a student possesses has a significant impact on success. Nevertheless, the QEP team believes that developmental courses can be redesigned to create a more learner-centered environment which will better meet students’ specific learning styles, help

students become more responsible for their own learning, and help students transfer their knowledge to college-level math courses.

A further review of the data, as shown in Tables 3 and 4, also demonstrates that 4 out of 10 students who begin a developmental math course are not retained as students at Northwest-Shoals Community College. Of course, this statistic means that the students were unable to reach their goal of a certificate or degree. The retention data were analyzed more stringently than fall-to-fall retention. For example, the fall 2002 cohort was followed for 6 years. A student who returned anytime during spring 2003 to spring 2008 was counted as retained. Simply looking at fall-to-fall retention rates would have revealed an even higher dropout rate. Table 5 shows a comparison of fall-to-fall dropout rates in developmental math and the overall student population. The dropout rate is 14% higher for developmental math than for the general student population. Such a high dropout rate, whether one looks at fall-to-fall numbers or the more stringent method used for the QEP, indicates the need for the College to create a developmental math program which can improve student learning and, as a by-product, the retention rate for students who take developmental math courses.

Table 5: Fall-to-Fall Retention Rates for Cohort Years

	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Average
Fall-to-fall retention rate for all students	58%	57%	54%	55%	54%	56%
Fall-to-fall retention rate for developmental math students	56%	47%	47%	49%	51%	50%

DEFINITIONS IN THE CONTEXT OF THE QEP

Boylan (2002) maintains that practically everything instructors do in the classroom affects student learning. He further contends that “it is essential, therefore, that instructional activities be carefully planned, diligently managed, and thoughtfully delivered.” It is the QEP team’s belief that Boylan is correct -- instructors do indeed impact student learning, and it is therefore imperative that pedagogical methods employed by instructors provide the greatest opportunity and the best environment for learning to occur which subsequently leads to student success. In reviewing the literature regarding best instructional practices, how students learn, and the advent of technology as an instructional tool, the team recognized that it should attempt to define innovative teaching as it relates to the QEP. For the purposes of this QEP, **innovative teaching is defined as an approach to instruction which embraces activities that 1) are varied, 2) engage students in active learning, 3) support diverse learning styles, 4) lead students to become more responsible for their own learning, and 5) lead students to interact with the instructor and other students in learning activities.** A component of innovative teaching is to engage students in a more active learning environment. While there is really no definition in the literature of “active learning,” there are principles of active learning which are discussed in more detail later. Nevertheless, for the purposes of this QEP, **active learning is described as the creation of a learning environment which requires students to be responsible for constructing their own understanding of math concepts through interactive experiences of solving**

problems, spending significant time on the experiences, and, when needed, receiving the assistance of others including instructors, tutors, and peers.

The principal goal Northwest-Shoals Community College has for its students is that they learn. Discussions throughout the selection and development of the topic of the QEP centered on what the team could do to most effectively impact student learning. As suggestions came in and topics were evaluated, the focus narrowed to innovative teaching as the best course of action to improve student learning. Furthermore, developmental education seemed to be the best area in which to pilot innovative teaching ideas. Nevertheless, always paramount in the discussions was the goal to improve student learning. When the goal became more focused on developmental math students, the question arose about what represents successful student learning. The belief was that learning which occurs in developmental courses should prepare students for college-level work.

Learning is complex and not fully understood. In fact, researchers continue to seek explanations about how people learn. Learning is indirectly measured through a variety of assessments ranging from written tests to skills demonstrations. So, it seems wise to define student learning in the context of this QEP. For the purposes of this QEP, **student learning will be defined as the advancement in knowledge, skills, abilities, and behaviors which are necessary to succeed as a student in gatekeeper courses and subsequently complete a certificate or degree resulting from exposure to innovative teaching methods.**

Students are required to take many courses throughout a program of study. Typically, there are courses that some students find to be extremely difficult, yet are required to be taken early in the students' academic career before they can move on to other coursework more specifically related to their program of study. These courses are generally referred to as "gatekeeper" courses because a number of students may not pass the courses and thus delay completion of the program of study or drop out of college altogether. **The QEP team is defining gatekeeper courses as those initial courses students are required to take which often cause a barrier to student success.** At Northwest-Shoals, the math courses which meet this definition include Math 116, Math 100, Math 110, or Math 112. NW-SCC developmental students struggle with passing the lowest level gatekeeper courses of Math 116 and Math 100. As demonstrated earlier by the data analysis, only 23% of students who begin in Math 090 and 41% of students who begin in Math 098 succeed in these gatekeeper courses.

The combination of innovative teaching and improved student learning comprises the heart of the QEP. The definitions which have been coined encompass what is expected of students and instructors. The team believes that improvements in instructional approaches which are carefully constructed, designed to meet a variety of student learning styles, and precisely implemented will result in a measurable improvement in student learning.

A REVIEW OF LITERATURE RELATED TO ACTIVE LEARNING

Bell (2003) has reported that most college freshmen believe that education is to be endured rather than enjoyed. Although there are perhaps countless reasons why students believe this way, one area that requires attention is the pedagogical method employed by most instructors – the traditional lecture. Halpern and Hakel (2003) describe it this way, “...virtually all college faculty teach the way they were taught.” They further believe that “it would be difficult to design an educational model which would be more at odds with the findings of current research about human learning than the model being used at most colleges and universities.” More specifically, research indicates that developmental students may be the group most immune to the effectiveness of traditional instruction. As Boylan (2002) reports, a variety of instructional methods in developmental education is an important contribution to student success; therefore, other options should be made available to developmental math students. The developmental math program of Northwest-Shoals will redesign courses to include active learning strategies.

Active learning offers a viable alternative to the traditional lecture-based format of instruction. Benjamin (1991) states that active learning provides students the opportunity to “enjoy hands-on and minds-on experiences.” The premise of active learning is based on two foundational principles: 1) good education means more than a transfer of knowledge from professor to student and 2) students are responsible for their own learning. Fundamentally, students become the seekers of learning while the instructor facilitates the students’

environment to learn. While responsibility for one's own learning is a characteristic that is important for all students, it is particularly important that developmental students acquire this quality.

The techniques used to promote active learning are varied, can occur in class or out of class, and range from simple to complex (Bonwell and Sutherland, 1996; Van Amburgh et al., 2005). The in-class setting lends itself well to activities such as cooperative learning (Smith 1986), simulations (Shannon, 1986), and even a modified lecture that engages students in discussion and analysis (Bonwell & Eison, 1991). On the other hand, activities such as service learning and interaction with faculty away from the classroom are examples of out-of-class experiences that can be part of active learning techniques (Terenzini & Pascarella, 1994).

A question of vital importance seems to be which active learning techniques to employ in the developmental classes in order to achieve the highest degree of effectiveness. McKeachie (1998) states it this way, "The best answer to the question, 'What is the most effective method of teaching?' is that it depends on the goal, the student, the content, and the teacher." Bok (2006) believes that it is up to "each institution to conduct its own carefully constructed studies to determine the effects of active, problem-based teaching on its students." Faculty who will be teaching in the developmental math area will be trained in active learning strategies; specifically, they will learn what techniques are available and when and how to use them for their classes. Furthermore, evaluations will be conducted each semester regarding student learning

outcomes which will serve as a part of the formative evaluation of the QEP project.

THE NW-SCC QUALITY ENHANCEMENT PLAN

Overview of the QEP

After active participation from College constituencies, a review of related literature, visits to other colleges, and a review of institutional data, the QEP Committee presented innovative teaching in the developmental math program as the focus of the Quality Enhancement Plan. This topic was approved by the SACS Leadership Team as well as the President's Cabinet.

PHASE 3 QEP Design														
Assigned QEP Design Team began work to develop QEP Developed action plan to research and write QEP that includes standards for student learning, assessment plan to assess student learning, budget and management structure. Visited Santa Fe Community College Developmental Program Visited University of Alabama Math Technology Learning Center														
2007	Jul	Aug	Sep	Oct	Nov	Dec	2008	Jan	Feb	Mar	Apr	May	Jun	Jul
Developed Implementation strategy for QEP Developed action plan to communicate and promote the QEP Dr. Sandy Shugart presented college-wide program on the Learning College Design Team researched and wrote QEP document														

The purpose of the NWSCC Quality Enhancement Plan, *Strengthening Mathematical Foundations Through Innovative Teaching*, is to increase student learning by creating a best practices environment of teaching and by equipping faculty with the knowledge, skills, and abilities to enable them to engage students in active learning. To accomplish this purpose, the QEP will focus on two goals supported by eight outcomes. The goals of the QEP are directly related to the College's philosophy, mission and strategic plan. As an expression of the philosophy and mission statement, this QEP is designed to improve the quality of developmental education by training faculty to integrate a variety of instructional strategies so that all students will have the opportunity to develop and expand their skills which will serve them throughout their lives.

The QEP's implementation, operation, and integration will be a critical part of the College's overall mission. As such, it will be included in all annual planning and student learning assessment.

The QEP directly supports three of the College's six strategic themes which are contained in the *Northwest-Shoals Community College 2006-2011 Strategic Plan*.

Strategic Initiative 1 – Northwest-Shoals Community College will provide opportunities for additional training for administration, faculty, and staff. The QEP will provide opportunities for faculty training that include workshops and seminars as well as the necessary financial assistance to attend conferences for the purpose of improving the quality of instruction for developmental math students.

Strategic Initiative 2 – Northwest-Shoals Community College will offer a variety of courses, programs, and instructional delivery methods. The QEP will focus on analyzing, then implementing, the most effective practices of instructional strategies which will provide developmental math students the best opportunities to learn.

Strategic Initiative 6 – Northwest-Shoals Community College will become a Learning College with a focus on assessing and improving student achievement. The QEP will help to establish a best practices environment of learning which will incorporate understanding student needs, including how individual students learn for the purpose of increasing student learning and success.

The Quality Enhancement Plan

The Northwest-Shoals Community College Quality Enhancement Plan will be implemented from 2009 through 2013. The goals and outcomes which provide the framework for the QEP have been assigned to the responsible personnel, have been designated a timeline, and have been allocated a budget for implementation. With these considerations in mind, the following narrative describes the NW-SCC Quality Enhancement Plan and relevant review of literature.

GOAL 1

To improve student learning in developmental math courses by redesigning courses to include innovative and engaging teaching strategies.

Outcome 1-1: To increase the common course exam scores of students in targeted courses compared to fall 2008, 2009, and 2010 baseline data respectively:

*098 (from TBD to TBD)

*100 (from TBD to TBD)

*090 (from TBD to TBD)

Outcome 1-2: To improve exit COMPASS math scores in targeted courses compared to entry placement scores:

*80% of MTH 098 students will improve their exit COMPASS scores to the MTH 100 level;

*80% of MTH 100 students will improve their exit COMPASS scores to the MTH 110 or MTH 112 level;

*80% of Math 090 students will improve their exit COMPASS scores to the MTH 098 or MTH 116 level.

Outcome 1-3: To improve student attitudes toward math as measured by a pre-post assessment tool adapted from an instrument developed by Fadali, Velasquez-Bryant, and Robinson (2004).

Outcome 1-4: To improve student success in developmental math courses as measured by course retention rates.

Target: By 2012, to increase from 23% to 33% the percentage of students who begin their math sequence in MTH 090 and who successfully complete a gatekeeper course of MTH 100 or MTH 116.

Target: By 2012, to increase from 41% to 50% the percentage of students who begin their math sequence in MTH 098 and who successfully complete a gatekeeper course of MTH 100 or 116

Outcome 1-5: To improve student engagement in math learning support labs as measured by student survey or usage records.

Target: 90% of students enrolled in targeted sections of math courses will frequently use the math lab as reported by student survey or usage records.

Approximately thirty-five percent of freshman students who enroll in community colleges require mathematics remediation (NCES, 2000). Moreover, approximately half of the students who enrolled in developmental math were not sufficiently successful to move to the next math class. The data at Northwest-Shoals are consistent with this national trend. The methodology regarding math instruction has been reviewed, evaluated, and analyzed extensively by researchers for decades. Despite this volume of research, the traditional method of mathematics instruction continues to dominate the academic scene. Perhaps this is best demonstrated by Blackner (2000) who wrote:

The agrarian calendar and factory method of bringing students to the institution and working with them in large groups is still the most common form of instruction. In the traditional classroom, students receive a standardized curriculum in a prescribed amount of time. All students, regardless of mathematical background, motivation or any other factors, are placed into a classroom where the pace and

depth of the instruction is set by the instructor. Because there is, in most cases, a single instructor, it is difficult if not impossible to structure the instruction to meet the individual needs of each student's learning and achievement. In this model, student needs are often secondary or tertiary to the convenience of educators and the interests of the institution (King & Crouse, 1998). Instruction is tied to specified times and places, and usually includes lecture and printed text. Borasi (1996) describes current mathematics teaching practices as predictable: Whether the topic addressed is fractions, geometry, graphing, probability, or even calculus, the lesson is likely to develop as a sequence of review of homework, presentation of new material by the teacher, practice exercises done individually by the students, and assignment of similar exercises for homework. (p. 16).

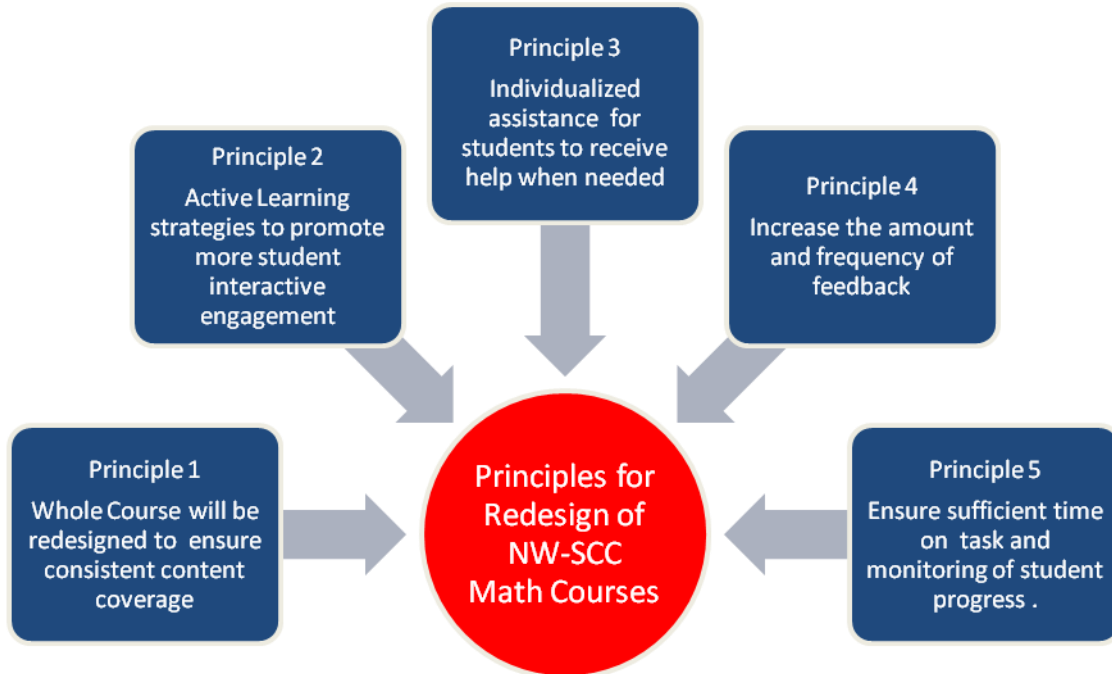
Therefore, there remains a need for consistently effective developmental mathematics instruction. In conversations with other colleges, as well as a review of the relevant literature, this QEP committee has discovered that it seems any one best approach for developmental math instruction continues to be elusive; however, this much seems to be clear - according to Wright, Wright, & Lamb, (2002) traditional instructional methods, particularly lecture, result in low success rates in developmental courses. Furthermore, Furner and Duffy (2002) reported that Oberlin (1982) found that several common teaching methods led to student math anxiety. Among these were assigning the same work for everyone,

teaching the textbook problem by problem, and insisting on only one correct way to complete a problem. In contrast, the evidence seems to point to a variety of instructional methods in developmental education as an important contribution to student success. This fact is supported by research from Higbee & Thomas (1999) as well as Smittle (2003) and Boylan (2002) as each of these reports that successful developmental programs employ a variety of teaching methods. Zemelman, Daniels, and Hyde (1998) researched a variety of math instructional techniques. Based on their evaluation of the research, they believe the best methods for teaching math include the use of the following:

- manipulatives (make learning math concrete)
- cooperative group work
- discussion
- questioning and making conjectures
- justification of thinking
- writing in math for thinking, expressing feelings, and solving problems
- problem-solving approaches to instruction
- content integration as a part of instruction
- calculators, computers, and all technology
- facilitated learning by instructors
- assessments of learning as a part of instruction

Northwest-Shoals proposes to incorporate a best practices environment for developmental math instruction. Among the options are class structure, tutoring, and computer-based instruction. These three areas will promote an

integration of at least eight of the eleven best methods reported by Zemelman, Daniels, and Hyde (1998). To be fully effective, the integration of all the areas is believed to be crucial; therefore, Northwest-Shoals will pilot an innovative instructional program based on a combination of principles from the *Math Emporium* model developed by Virginia Tech University and modified by the University of Alabama, and the University of Louisiana – Monroe (ULM). Each of these programs follows the five principles identified by the National Center for Academic Transformation (NCAT) for successful course redesign. Specifically, ULM has reported an increase in student success rate (C or better) from 45% under the previous instructional approach to 69% with the redesigned instructional approach (Personal correspondence, Dec. 18, 2007). Similarly, based on data from 15 semesters of course redesign, the University of Alabama reported an increase from an average success rate of 46% prior to course redesign to an average success rate of 60% after course redesign; however, over the most recent 7 semesters, the average success rate has risen to 67%, which is similar to ULM's results. Furthermore, Alabama's data show that student success in the most recent five fall semesters averaged 74% (Benson).



Adapted from National Center for Academic Transformation

The first principle of course redesign that NW-SCC will follow is to redesign the whole course. NW-SCC will begin by redesigning MTH 098 in year one of the QEP project because this course impacts the largest number of developmental math students. The course redesign will focus on agreed upon learning goals for students to ensure that all instructors will be consistent in content coverage so that all students receive similar kinds of learning experiences whether the course is taught by a full time faculty member or an adjunct faculty member. Once MTH 098 is completed, the course slated for redesign in year two will be MTH 100 and then MTH 090 in year three.

The second principle of course redesign which NW-SCC will use is to encourage active learning. Traditional teaching methods will be replaced with a variety of materials and activities designed to move students from a passive role to more interactive engagement. Active learning for students will be highly

dependent on math instructional software as well as other web-based learning resources. Among the instructional software programs that the math personnel will investigate are ALEKS, My Math Lab, I Can Learn, and Hawkes Learning System. Of the features provided by instructional software programs, packages which include a diagnosis of students' math needs and assessment tools are primary requirements. In addition, modularized online tutorials which present course content with links to a variety of learning assistance tools will be investigated. Consequently, classroom meetings will be partially or entirely replaced by online learning activities which will occur in an academic success center on each campus.

The third principle for course redesign that NW-SCC will apply is to provide students with individualized assistance. One of the key components of success for developmental math students is to receive help when they need it. Through the addition of an academic success center, individual and learning community activities will replace traditional lecture classroom time. Instructional software, although a major component of the lab experience, is not always sufficient to work students through a concept they do not understand. In the academic success center, students will be provided with individualized assistance through a variety of resource people, such as the instructor, course assistants, tutors, designated peer tutors, and even fellow students. Receiving timely support will help students address the concept at hand, provide assistance to help them to work through the concept, and allow them to move forward on task.

The fourth course redesign principle that NW-SCC will employ is to build in ongoing assessment and prompt (automated) feedback. The most effective models for course redesign include the use of computer-based assessment strategies. It is well documented that increasing the amount and frequency of feedback to students leads to increased learning. Through the use of instructional math software, students can have immediate feedback regarding homework assignments as well as regular testing through short quizzes which allows both the student and the instructor better insight into the student's understanding of mathematical concepts. Furthermore, this approach encourages an environment of "continue to do it until you get it right." In relation to this approach, the pedagogical research is clear. Repeated practice, along with prompt and frequent feedback, enhances student learning. An important aspect of the "get it right" environment and the use of instructional math software is to provide students with detailed diagnostic feedback which helps them understand why a response is incorrect. Then the student can be directed to review material which explains the concept or receive additional help from one of the assistants in the academic success center.

The final principle that NW-SCC will incorporate is to ensure sufficient time on task and monitor student progress. Students must spend a sufficient amount of time on task in order to improve learning. To accomplish this time management, students, especially developmental students, need structure; however, rather than depending on class meetings per se, students will be required to spend a minimum number of hours per week in the academic

success center. The focus will shift from attending class to mastering specific learning outcomes. Once again, the use of instructional math software, which includes tracking features, will play a key role in ensuring that students stay on task. Furthermore, the software package will assist instructors in monitoring student progress including lab assignments, homework assignments, and quizzes.

The approach that NW-SCC proposes has proven successful at other colleges and universities. This learner-centered approach, which incorporates accommodation for various learning styles and engages students in active learning strategies, moves away from the current practice in higher education. Current practice is heavily oriented toward treating students as if they all have the same learning needs, learning styles, and abilities. Being successful requires a change in certain knowledge, skills, and use of innovative pedagogies by the NW-SCC faculty. Crucial to initiating this change is to provide additional training regarding these models.

GOAL 2

To improve math instructors' knowledge, skills, and use of innovative pedagogy as learning facilitators.

Outcome 2-1: To improve the knowledge of math faculty toward alternative and innovative teaching strategies (pre-post testing).

Target: To improve from TBD to TBD (fall 2008 baseline administration)

Outcome 2-2: To improve the use of multiple alternative and innovative teaching styles (instructor self-reporting).

Target: To improve from TBD to TBD (fall 2008 baseline administration)

Outcome 2-3: To increase by 50% the number of math faculty who complete a master teacher program focusing on the implementation of alternative and innovative teaching styles in developmental math courses.

From the corporate world to education, it is well accepted that training of employees is essential to the vitality of any enterprise. As it relates to developmental education, Kozeracki (2002) states that the “presence of a well-trained, dedicated, and respected faculty” is essential to the academic success of developmental students. While many faculty are well trained and knowledgeable in their academic area of expertise, there is often a gap regarding the knowledge needed to teach developmental students. Boylan (unknown date) supports this thesis in his article “Graduate Attributes: Why and How,” where he cites Angelo and Cross in listing several impediments to developmental students’ success. One impediment is the lack of college faculty’s “impact on student intellectual development” due to faculty members not having received “any formal training in how to teach” since most college faculty are “subject-matter experts, not teaching experts.” Boylan, Bliss, and Bonham (1997) found that “students were more likely to pass remedial courses, earn higher grades, and be retained longer” when faculty and staff “working with remedial programs” were “specifically trained in the techniques, models, and methods appropriate to helping under prepared learners.” As the research confirms, a variety of instructional techniques are required to have success in developmental classes. This research is in stark contrast to the often followed “teach as I was taught” method. More recently,

student learning styles and instructional methods to best meet those styles have gained increasing interest by both researchers and practitioners. This knowledge about learning styles is perhaps of greater importance with developmental students because many of them have been marginally or completely unsuccessful under traditional methods of instruction; therefore, developmental instructors' abilities which are necessary to meet the needs of their students require additional training in an integration of pedagogy and how students learn, including learning styles. Littleton (2000) believes that developmental educators should be trained in theories, pedagogy, and diversity. He further states that developmental faculty should possess "knowledge of developmental students and how they learn."

NW-SCC is committed to promoting professional development for its developmental math faculty as well as others who will be involved with developmental education. One of the first steps to promote professional development as it relates to student-centered teaching and teaching based on learning styles was a presentation by Dr. Sandy Shugart, President of Valencia Community College, on January 30, 2008. Valencia is a learning-centered college recognized by the League for Innovation in the Community College as one of 12 international Vanguard Learning Colleges. Dr. Shugart addressed the entire faculty on general topics related to developing a learning-centered environment, student learning styles, and how these issues relate to developmental education.

<p style="text-align: center;">Phase 4 Pre-Implementation</p> <p>Communicate and Promote the QEP Dr. Sandra McGuire presents workshop on Student Learning Identify Math 098 course leader Math Department evaluates software</p>							
2008	Aug	Sep	Oct	Nov	Dec	2009	Jan
<p>Established Baseline data for Math 098 Initiate necessary budget requests Submit goals and outcomes into Unit Planning system Make any modifications to meet SACS requirements</p>							

In addition to the overview presentation by Dr. Shugart, other, more specific, training will be promoted. Faculty will receive training about active learning and student engagement techniques. Sheldon cites Boylan (2002) saying that “professional development should include training designed to provide experience with and exposure to a variety of developmental education teaching strategies, such as mastery learning, collaborative learning, small group work, and classroom assessment techniques,” many of which are active learning strategies. While there is significant attention to what techniques are available, of primary interest is how and when to use them. Instructor training will focus on how to implement active learning strategies.

Boylan (2002) also asserts that in addition to experience and exposure to teaching strategies, for developmental courses to be effective, instructors must be knowledgeable regarding the different student learning styles. Smittle (2003) contends that “effective teachers use knowledge of their students’ varied learning styles as they plan their instruction.” NW-SCC developmental instructors will receive training in learning styles. Among the key issues focused on are how to (1) define learning styles, (2) identify learning styles, (3) construct instructional strategies to match identified learning styles, and (4) apply the instructional strategies in the developmental class. Dr. Saundra McGuire of Louisiana State University, a noted expert on teaching based on learning styles, is scheduled to make a workshop presentation to the entire College faculty. This event is scheduled for August 13, 2008.

Developmental math instructors will also be trained in the use of the computer software that is selected for mathematics instruction. Instructors will carefully review the software options available and make a decision regarding which software to pilot. Once software is chosen, full-time faculty, adjunct faculty, course assistants, and tutors who will be involved with the software will be trained in its use. Additional training will be provided for faculty regarding the role of learning facilitators as well as instructional strategies which can be used to enhance student learning.

Implementation of the Quality Enhancement Plan

The following provides a detailed plan designed to show the significant events related to the accomplishment and evaluation of the QEP.

Table 6: QEP Implementation Plan**PERIOD: Prior to QEP Review**

Tasks	Responsible	Strategies & Methods	Assessment
Appoint Year 1 QEP Implementation Team with QEP Director	President - Dr. Lee and Vice President - Dr. Colagross		Team appointed and working
Complete QEP document	QEP Design Team	Complete topic and focus	Initial Draft May 30; Completed document July 30; budget printing costs
Identify course(s) to be redesigned	QEP Design Team	QEP Implementation Team selects math courses for revision	Math 098 selected as first course to be redesigned followed by Math 100 and then Math 090
Plan faculty pre-assessment survey for baseline data	QEP Director and Design Team	Design survey that addresses faculty knowledge, skills, and behaviors. Put survey in Formsite.	Full-time and adjunct faculty complete survey on Formsite.
Plan QEP-based faculty development for Fall 08 In-service	QEP Design Team	Dr. Saundra McGuire from LSU will conduct workshop at Fall 2008 In-service	Program evaluation completed by faculty. Budget item for stipend and travel expenses for presenter
Plan QEP kickoff celebration for NWSCC	QEP Promotion Team	Promotion Team to plan event and provide promotional items	Celebration will be September 4 (MS) and September 8 (PC). Posters and other promotional items will be posted and delivered throughout campuses.
Determine baseline of student achievement in MTH098.	QEP Design Team and selected math faculty	Develop and administer common course exam to gather data.	Common course exam will be given as final exam for fall 2008 in Math 098 courses.
Begin procedures for identifying Math 098 course leader for QEP project	President - Dr. Lee, Vice President - Dr. Colagross	Call for interest to qualified personnel to become candidate for Math 098 course leader	Evaluate to determine best candidate for Math 098 course leader
Identify and renovate Academic Success Center	President - Dr. Lee and Vice President - Dr. Colagross	Develop plans; explore exemplary programs	Budget Item

Assign QEP Implementation Team	President - Dr. Lee and Vice President - Dr. Colagross	Appoint QEP Implementation Team.	Team to be assigned
Develop common course exam for MTH 098	Selected math faculty	Math faculty develops common course exam based on required competencies which are presented in MTH098	Common course exam ready for piloting by end of fall 08.
Assign QEP Math 098 course leader	President - Dr. Lee and Vice President - Dr. Colagross	Reassign or hire math faculty person to become Math 098 course leader to design and implement course revisions.	Math 098 course leader to be assigned.

PERIOD: YEAR ONE IMPLEMENTATION JANUARY-DECEMBER 2009

Tasks	Responsible	Strategies & Methods	Assessment
Assign QEP Director	President - Dr. Lee and Vice President - Dr. Colagross	Appoint QEP Director who will report directly to Vice President - Dr. Colagross	Director assigned
Train Faculty	QEP Director and Professional Development Chair	Select trainer to provide workshop for faculty in innovative instructional strategies, particularly as they relate to math	Trainer to come on-site. Project to schedule during January in-service or shortly thereafter. Budget item.
Implementation Team begins working	QEP Implementation Team	Meets weekly	Completes scheduled tasks
Develop common course exam for MTH100	Selected math faculty	Team develops common course exam based on required competencies which are presented in MTH100	Common course exam ready for piloting by fall 2009 to collect baseline data.
Select software for use in Academic Success Lab	QEP Implementation Team	Math software is reviewed; math faculty discuss with exemplary programs their usage and results.	Make choice for math software to use by March 31, 2009. Budget item.
Provide training for math software	QEP Director	Identify trainer; set up workshops	Training on math software is completed by August 10, 2009. Budget Item.

Revise Math 098 to become a competency-based, lab-oriented approach to instruction.	Math 098 course leader, selected math faculty and QEP Implementation Team.	Review and revise MTH098 to make changes to course delivery, activities, etc.	All Math 098 course content, delivery, student activities, course material are standardized and reflect innovative teaching beginning in summer 09.
Begin MTH098 revised course	QEP Math 098 course leader	MTH098 is taught under new format summer 2009.	Evaluate student learning for Math 098. Compare to 2008 baseline.
Reassess faculty knowledge, skills, and behaviors using developed survey	QEP Director	90% of full-time and adjunct math faculty completes survey.	Compare results to pre-implementation survey.
Assess MTH098 students for learning regarding competencies for MTH098 as well as attitudes toward math.	Math 098 course leader instructor with assistance from QEP Director	95% of students will complete COMPASS and common course exam for MTH098	COMPASS results will be analyzed to determine if students scored into MTH100, and common course exam will determine mastery of competencies. Budget Item.
Identify Year 2 Team members and pair with Year 1 Team mentor.	QEP Implementation Team and Director	Solicit faculty based on interest in MTH 100 for year 2.	Identify faculty to participate in Year 2 Team prior to start of Spring 2010 semester.
Annual QEP assessment and use of results for formative evaluation	QEP Director, QEP Implementation Team	Debrief faculty, division chair, department head and students.	Use results to guide improvements.

PERIOD: YEAR TWO IMPLEMENTATION JANUARY-DECEMBER 2010

Tasks	Responsible	Strategies & Methods	Assessment
Continue QEP Director's assignment	President - Dr. Lee and Vice President - Dr. Colagross	Continue QEP Director appointment	Director's assignment at 50%
Charge QEP Year 2 Implementation Team	President - Dr. Lee and Vice President - Dr. Colagross	Appoint QEP Year 2 Implementation Team.	Team charged
Evaluate QEP Math 098 course leader	QEP Director	Performance Evaluation	Based on positive evaluation, continue with Math 098 course leader.
Train faculty	QEP Director and Professional Development Chair	Identify faculty development needs. Select trainer to provide workshop. QEP Year 1 Implementation Team presents lessons learned and serves as mentors to Year 2 Team.	Trainer to come on-site. Project to schedule during January 2010 in-service or shortly thereafter. Budget item.
Continue with MTH098 revisions in all MTH098 sections.	QEP Implementation Team	All MTH098 courses are taught in new format.	Test scores regarding MTH098 competencies.
Year 2 Team begins working on Math100	QEP Implementation Team and Year 2 Math 100 Team	Meets weekly	Completes scheduled tasks
Develop common course exam for MTH090	Selected math faculty	Team develops common course exam based on required competencies which are presented in MTH090	Common course exam ready for piloting fall 2010 to collect baseline data.
Continue licensure for software used in Academic Success Center	QEP Implementation Team	Math software license is renewed	Budget item
Provide training for math software for Year 2 Team	QEP Director	Identify trainer; set up workshops	Training on math software is completed by August 10, 2010. Budget item
Revise MTH100 to become a competency-based, lab-oriented	Math 100 course leader, math 100 team and QEP Implementation	Review and revise MTH100 to make changes to course delivery, activities, etc	All Math 100 course content, delivery, student activities, course material are

approach to instruction	Team.		standardized and reflect innovative teaching beginning in summer 2010.
Begin MTH100 revised course	Lead math QEP instructor	MTH is taught under new format summer 2010	Evaluate student learning for Math 100. Compare to fall 2009 baseline.
Reassess faculty knowledge, skills, and behaviors using developed survey	QEP Director	90% of full-time and adjunct math faculty complete survey.	Compare results to pre-implementation survey.
Assess MTH098 students for learning regarding competencies for MTH098 as well as attitudes toward math.	Lead math instructor with assistance from QEP Director	95% of students will complete COMPASS and common course exam for MTH098	COMPASS results will be analyzed to determine if students scored into MTH100 and common course exam will determine mastery of competencies. Budget Item.
Assess MTH100 students regarding competencies for MTH100 as well as attitudes towards math	Lead math instructor with assistance from QEP Director	95% of students will complete COMPASS and common course exam for MTH100	COMPASS results will be analyzed to determine if students scored into Math110 or 112 and common course exam will determine mastery of competencies. Budget item.
Identify Year 3 Team members and pair with Year 2 Team mentor.	QEP Implementation Team and Director	Solicit faculty based on interest in Math 090 for year 3.	Identify faculty to participate in Year 3 Team prior to start of Spring 2011 semester.
Annual QEP assessment and use of results for formative evaluation	QEP Director, QEP Implementation Team	Debrief faculty, division chair, department head and students.	Use results to guide improvements.

PERIOD: YEAR THREE IMPLEMENTATION JANUARY-DECEMBER 2011

Tasks	Responsible	Strategies & Methods	Assessment
Continue QEP Director's assignment	President - Dr. Lee and Vice President - Dr. Colagross	Continue QEP Director appointment	Director's assignment continues at 50%
Charge QEP Year 3 Team	President - Dr. Lee and Vice President - Dr. Colagross	Appoint QEP Year 3 Team for MTH 090	Team to be charged
Evaluate QEP Math 098 and Math 100 course leaders	QEP Director	Performance Evaluation	Based on positive evaluation, continue with Math 098 and Math 100 course leaders.
Plan on-going faculty training for year 3	QEP Director and Professional Development Chair	Identify faculty development needs. Select trainer to provide workshop QEP Year 2 Team presents lessons learned from year 2 and serves as mentors to Year 3 Team.	Trainer to come on-site. Project to schedule during January 2011 in-service or shortly thereafter. Budget item.
All MTH098 sections continue to be taught in new format with any necessary adjustments.	QEP Implementation Team	All MTH098 courses are taught in new format.	Test scores regarding MTH098 competencies.
Continue with MTH100 revisions in all MTH100 sections.	QEP Implementation Team	All MTH100 courses are taught in new format.	Test scores regarding MTH100 competencies.
Year 3 Team begins working on MTH090	Math 090 course leader, selected math faculty and QEP implementation team.	Meets weekly	Completes scheduled tasks
Continue licensure for software used in Academic Success Center	QEP Implementation Team	Math software license is renewed	Budget item.
Provide training for math software for Year 3 Team.	QEP Director	Identify trainer; set up workshops.	Training on math software is completed by August 10, 2011. Budget Item.

Revise Math 090 to become a competency-based, lab-oriented approach to instruction.	QEP Implementation Team and Year 3 Team.	Team members review and revise MTH090 to make changes to course delivery, activities, etc.	Course content delivery, student activities, course material reflect innovative teaching summer 2011.
Begin MTH090 revised course	Math 090 course leader and Math 090 team	MTH090 is taught under new format summer 2011.	Evaluate student learning for Math 090. Compare to fall 2010 baseline.
Reassess faculty knowledge, skills, and behaviors using developed survey	QEP Director	90% of full-time and adjunct math faculty complete survey.	Compare results to pre-implementation survey.
Assess MTH098 students regarding competencies for MTH098 as well as attitudes toward math.	Math 098 course leader with assistance from QEP Director	95% of students will complete COMPASS and common course exam for MTH098	COMPASS results will be analyzed to determine if students scored into MTH100 and common course exam will determine mastery of competencies. Budget Item.
Assess MTH100 students regarding competencies for MTH100 as well as attitudes toward math.	Math 100 course leader with assistance from QEP Director	95% of students will complete COMPASS and common course exam for MTH100	COMPASS results will be analyzed to determine if students scored into Math 110 or 112 and common course exam will determine mastery of competencies. Budget Item.
Assess MTH090 students regarding competencies for MTH090 as well as attitudes toward math.	Math 090 course leader with assistance from QEP Director	95% of students will complete COMPASS and common course exam for MTH090	COMPASS results will be analyzed to determine if students scored into MTH098 and common course exam will determine mastery of competencies. Budget Item.
Identify Year 4 Team members and pair with Year 3 Team mentor.	QEP Implementation Team and Director	Solicit faculty based on interest in MTH 090 for year four.	Identify faculty to participate in Year 4 Team prior to start of Spring 2011 semester.
Annual QEP assessment and use of results for formative evaluation	QEP Director, QEP Implementation Team	Debrief faculty, division chair, department head and students.	Use results to guide improvements.

PERIOD: YEAR FOUR IMPLEMENTATION JANUARY-DECEMBER 2012

Tasks	Responsible	Strategies & Methods	Assessment
Continue QEP Director's assignment	President - Dr. Lee and Vice President - Dr. Colagross	Continue QEP Director appointment	Director assigned at 50%
Charge QEP Year 4 Team	President - Dr. Lee and Vice President - Dr. Colagross	Appoint QEP Year 4 Team for course to be identified.	Team charged
Evaluate QEP math course leaders	QEP Director	Performance Evaluation	Based on positive evaluation, continue with Math 098, Math 100, and Math 090 course leaders.
Plan on-going Faculty training for year 4	QEP Director and Professional Development Chair	Identify faculty development needs. QEP Year 3 Team presents lessons learned from year 3 and serves as mentors to Year 4 Team.	Trainer to come on-site. Project to schedule during January 2012 in-service or shortly thereafter. Budget item.
All MTH098 sections continue to be taught in new format with any necessary adjustments.	QEP Implementation Team	All MTH098 courses are taught in new format.	Test scores regarding MTH098 competencies.
All MTH100 sections continue to be taught in new format with any necessary adjustments.	QEP Implementation Team	All MTH100 courses are taught in new format.	Test scores regarding MTH100 competencies.
Continue with MTH090 revisions in all MTH090 sections.	QEP Implementation Team	All MTH090 courses are taught in new format.	Test scores regarding MTH090 competencies.
Year 4 Team begins working on identified course(s)	QEP Implementation Team and Year 4 Team.	Meets weekly	Completes scheduled tasks
Continue licensure for software used in Academic Success Lab	QEP Implementation Team	Math software license is renewed	Budget item.

Provide training for math software for Year 4 Team as needed.	QEP Director	Identify trainer; set up workshops	Training on math software is completed by August 10, 2009. Budget Item.
Revise selected course(s) to become a competency-based, innovative approach to instruction.	Year 4 QEP Implementation Team, Year 2 & 3 Teams.	Team members review and revise selected course(s) to make changes to course delivery, activities, etc.	Course content delivery, student activities, course material reflect innovative teaching summer 2012.
Begin revised course(s)	Course leader	Selected course(s) are taught under new format summer 2012.	Test scores regarding selected course competencies.
Reassess faculty knowledge, skills, and behaviors using developed survey	QEP Director	90% of selected full-time and adjunct faculty complete survey.	Compare results to pre-implementation survey.
Assess MTH098 students regarding competencies for MTH098 as well as attitudes toward math.	Lead math instructor with assistance from QEP Director	95% of students will complete COMPASS and common course exam for MTH098	COMPASS results will be analyzed to determine if students scored into MTH100 and common course exam will determine mastery of competencies. Budget Item.
Assess MTH100 students regarding competencies for MTH100 as well as attitudes toward math.	Lead math instructor with assistance from QEP Director	95% of students will complete COMPASS and common course exam for MTH100	COMPASS results will be analyzed to determine if students scored into MTH110-112 and common course exam will determine mastery of competencies. Budget Item.
Assess MTH090 students regarding competencies for MTH090 as well as attitudes toward math.	Lead math instructor with assistance from QEP Director	95% of students will complete COMPASS and common course exam for MTH090	COMPASS results will be analyzed to determine if students scored into MTH098 and common course exam will determine mastery of competencies. Budget Item.
Identify Year 5 Team members and pair with Year 1-4 Team mentors.	QEP Implementation Team and Director	Solicit faculty based on interest in course revisions based on innovative teaching strategies.	Identify faculty to participate in Year 5 Team prior to start of Spring 2013 semester.
Annual QEP assessment and use of results for formative evaluation	QEP Director, QEP Implementation Team	Debrief faculty, division chair, department head and students.	Use results to guide improvements.

PERIOD: YEAR FIVE IMPLEMENTATION JANUARY-DECEMBER 2013

Tasks	Responsible	Strategies & Methods	Assessment
Continue QEP Director's assignment	President - Dr. Lee and Vice President - Dr. Colagross	Continue QEP Director appointment	Director assigned at 50%
Charge QEP Year 5 Team	President - Dr. Lee and Vice President - Dr. Colagross	Charge QEP Year 5 Team for identified course (hopefully MTH112)	Team charged
Evaluate QEP course leaders	QEP Director	Performance Evaluation	Based on positive evaluation, continue with course leaders.
Plan on-going faculty training for year 5	QEP Director and Professional Development Chair	Identify faculty development needs. QEP Year 4 Team presents lessons learned from year 4 and serves as mentors to Year 5 Team.	Trainer to come on-site. Project to schedule during January 2013 in-service or shortly thereafter. Budget item.
All MTH098 sections continue to be taught in new format with any necessary adjustments.	QEP Implementation Team	All MTH098 courses are taught in new format.	Test scores regarding MTH098 competencies.
All MTH100 sections continue to be taught in new format with any necessary adjustments.	QEP Implementation Team	All MTH100 courses are taught in new format.	Test scores regarding MTH100 competencies.
All MTH090 sections continue to be taught in new format with any necessary adjustments.	QEP Implementation Team	All MTH090 courses are taught in new format.	Test scores regarding MTH090 competencies.
Continue with selected course(s) revisions in all selected course(s) sections.	QEP Implementation Team	All selected courses are taught in new format.	Test scores regarding selected courses competencies.
Continue licensure for software used in Academic Success Lab	QEP Implementation Team	Math software license is renewed	Budget item.

Reassess faculty knowledge, skills, and behaviors using developed survey	QEP Director	90% of selected full-time and adjunct faculty complete survey.	Compare results to pre-implementation survey.
Assess MTH098 students regarding competencies for MTH098 as well as attitudes toward math.	Lead math instructor with assistance from QEP Director	95% of students will complete COMPASS and common course exam for MTH098	COMPASS results will be analyzed to determine if students scored into MTH100 and common course exam will determine mastery of competencies. Budget Item.
Assess MTH100 students regarding competencies for MTH100 as well as attitudes toward math.	Lead math instructor with assistance from QEP Director	95% of students will complete COMPASS and common course exam for MTH100	COMPASS results will be analyzed to determine if students scored into MTH110-112 and common course exam will determine mastery of competencies. Budget Item.
Assess MTH090 students regarding competencies for MTH090 as well as attitudes toward math.	Lead math instructor with assistance from QEP Director	95% of students will complete COMPASS and common course exam for MTH090	COMPASS results will be analyzed to determine if students scored into MTH098 and common course exam will determine mastery of competencies. Budget Item.
Annual QEP assessment and use of results for formative evaluation	QEP Director, QEP Implementation Team	Debrief faculty, division chair, department head and students.	Use results to guide improvements.

BROAD-BASED INVOLVEMENT TO IMPLEMENT THE QEP

The QEP was developed through an inclusive and collegial process as described in *Broad-Based Involvement to Develop the QEP* on pages 7-13. The implementation of the plan will also follow a similar broad-based participation of the college community. The following describes a brief review of the groups and individuals who will be involved in *Strengthening Mathematical Foundations Through Innovative Teaching*.

- **Students** who are enrolled in Math 090, 098, and 100 make up more than 20% of the student population in any given fall or spring semester. It is they who will be the primary beneficiaries of *Strengthening Mathematical Foundations*. In addition, students will serve as peer tutors in the math academic success center. All of these students, both class members and peer tutors, will provide feedback regarding the QEP through surveys and other forms of assessment which incorporate student feedback.
- **Math faculty** will lead and participate in the course redesigns of Math 098, Math 100, and Math 090. They will receive specific training related to course software and teaching in the newly designed course delivery environment. A number of these math faculty members will also serve as mentors to one another in course redesign.
- **All faculty** will have opportunities to participate in professional development activities included in the QEP. For example the workshop presented by Dr. Sandra McGuire on August 13, 2008, will include all faculty members. In addition, the knowledge and experience gained from the course redesigns by the math faculty will be evaluated for implementation into other areas of the curriculum.
- **Administrators** will provide leadership, ensure funding for the project's activities, and establish the organizational support that will lead to success of the QEP.
 - **Vice President of Instruction, Institutional Effectiveness, and Development**, Dr. Glenda Colagross, has been given the charge

by Dr. Humphrey Lee, President, to provide the leadership required to achieve the goals and objectives of the QEP. See the organizational chart (page 56) for the names and titles of personnel Dr. Colagross will hold responsible for implementing the QEP.

- **Assistant Dean of Instruction/Title III Project Director**, Dr. Timmy James, will assist Dr. Colagross to ensure the overall success of the QEP. He will advocate for the plan and lead personnel in achieving the goals of the QEP. His primary station is the Phil Campbell Campus which will be advantageous for implementation of the QEP on that campus. Furthermore, as Director of Title III, he will ensure that all eligible QEP activities are funded in accordance with the Title III proposal. He will chair the Title III Team, approve all Title III expenditures, and submit reports to the U. S. Department of Education.
- **Director of Developmental Education/Title III Activity Director**, Ginger Long, will lead in the implementation and assessment of the QEP. She will serve as the operational officer and supervisor of the personnel who will deliver the activities of the QEP.
- **Math Division Head**, Steve McGouyrk, will arrange math faculty teaching schedules to ensure QEP courses are well staffed.
- **Director of Institutional Research**, John McIntosh, will assist with assessment of the QEP.

- **Administrators of Other Departments and Their Staffs** will provide any necessary support for success of the QEP. These additional departments include, but are not limited to, Student Services, Human Resources, Management Information Systems, Technology Support, Advising Center, Maintenance, and the Business Office.

FISCAL AND PHYSICAL CAPABILITY FOR THE QEP

Northwest-Shoals Community College is committed to the QEP and has strong support from the College administration to ensure its success through adequate funding and facilities. NW-SCC has a sound financial base, demonstrated financial stability, and adequate physical resources to support the mission of the institution and the scope of its programs and services, including the QEP. Audited financial statements for the 2003-2004, 2004-2005, and 2005-2006 academic years at the College show consistent increases in assets over the past several years. Unrestricted net assets increased 2.7% from 2003-2004. The increase for 2004-2005 was 8.4%, and the increase for 2005-2006 was 9.2%. Net asset information is an indication of the institution's ability to continue operations. Cash reserves are another indicator of financial stability. NW-SCC keeps cash in reserves for two months of expenditures. Therefore, if funding from the state were delayed, the College could pay normal operating expenditures for a two-month period.

In the planning and developing of the QEP, the team identified the personnel, facilities, equipment, and financial resources necessary for the successful implementation of *Strengthening Mathematical Foundations Through Innovative Teaching*. Implementation of the QEP will begin in 2009.

Most of the expense for the QEP will be for administration, instructional personnel, and tutors, while a smaller percentage will be needed for professional development, operational supplies, and equipment. About 60% of the required QEP funds will be reallocated from existing college expenditures. New expenses to fund the QEP are about 7% of the QEP projected budget. The remaining 33% will be funded by a recently awarded U. S. Department of Education Title III grant that will commence on October 1, 2008. The Title III grant was written to closely parallel the QEP; however, the Title III grant has a broader scope than the QEP.

One major expense will be the reassignment (50% salary and benefits) of the Director of the QEP. Ms. Ginger Long, Director of Developmental Education, has been named as the Director of the QEP. She will oversee the implementation of all components of the QEP. The largest expense will be the instructional staff. A course leader for Math 098, Math 100, and Math 090 will be hired or reassigned, although it is projected that math faculty will be reassigned. This expense will include full-time salary and benefits. It is projected that adjunct instructors, instructor assistants, and tutors will also be required as the project progresses. Other expenses will revolve around the professional development activities for the faculty and staff. Startup expenses will center on software

purchases for the math lab. The cost will vary depending on the final choice of instructional software. Computers for the academic success center are already available. The lab location on each campus has been identified. The Shoals Campus location is projected to be housed in the Larry McCoy Learning Resources Center. The Phil Campbell location will be in the area adjacent to the library.

Table 7: Estimated Expenses for QEP Implementation

Personnel (Salaries & Benefits)	Prior to QEP Review	2009	2010	2011	2012	2013	Total	Title III Funds	Existing College Funds	New College Funds
Director of the QEP		\$45,522	\$45,522	\$47,997	\$47,997	\$48,654	\$235,692	\$235,692	\$0	\$0
Math 098 Course Leader		\$68,801	\$70,888	\$72,975	\$75,062	\$77,149	\$364,875	\$0	\$364,875	\$0
Math 100 Course Leader			\$70,888	\$72,975	\$75,062	\$77,149	\$296,074	\$0	\$296,074	\$0
Math 090 Course Leader				\$72,975	\$75,062	\$77,149	\$225,186	\$0	\$225,186	\$0
Lab Manager - MS		\$24,927	\$43,788	\$44,868	\$45,936	\$47,004	\$206,523	\$206,523	\$0	\$0
Lab Manager - PC			\$24,927	\$43,788	\$44,868	\$45,936	\$159,519	\$159,519	\$0	\$0
Adjunct Instructors		\$36,450	\$36,450	\$36,450	\$36,450	\$36,450	\$182,250	\$0	\$182,250	\$0
Tutors		\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$100,000	\$0	\$0	\$100,000
Total Estimated Personnel Expenses		\$195,700	\$312,463	\$412,028	\$420,437	\$429,491	\$1,770,119	\$601,734	\$1,068,385	\$100,000
Operating										
Document Preparation	\$500.00						\$500.00	\$0	\$500	\$0
Promotion of QEP	\$2,500.00						\$2,500.00	\$0	\$2,500	\$0
Computer Software for Math Lab		\$12,000	\$10,000	\$10,000	\$10,000	\$10,000	\$52,000	\$38,500	\$0	\$13,500
Compass Testing		\$250.00	\$1,350.00	\$2,400.00	\$3,200.00	\$3,200.00	\$10,400	\$0	\$0	\$10,400
Professional Development (Including Travel)	\$2,500.00	\$6,500	\$6,500	\$6,000	\$6,000	\$4,500	\$32,000.00	\$32,000	\$0	\$0
Materials & Supplies		\$7,500	\$7,500	\$6,750	\$6,750	\$5,500	\$34,000	\$0	\$34,000	\$0
Total Operating Expenses		\$14,000	\$14,000	\$12,750	\$12,750	\$10,000	\$63,500	\$70,500	\$37,000	\$23,900
Total Estimated Expenses		\$209,700	\$326,463	\$424,778	\$433,187	\$439,491	\$1,833,619	\$672,234	\$1,105,385	\$123,900

Financial Impact of the QEP

The most obvious financial impact of the QEP will result from retaining students. Currently, data shows that the fall-to-fall retention rate for Math 090 and Math 098 students is 50% compared to 56% for the overall college population (page 19). By changing the approach to instruction, it is projected that more students will be retained. As more students are retained, more students will succeed in the gateway math courses. It is projected that success rates for Math 090 students will increase from 23% to 33% in gateway math courses. Similarly, it is projected that success rates for Math 098 students will increase from 41% to 50% in gateway math courses. After a student succeeds in a gateway math course, the chances for completing a course of study increase significantly. Table 8 demonstrates the potential financial impact of increasing the success rates of Math 090 and Math 098 students in gateway courses Math 116 or Math 100 based on actual data from fall semesters 2002-2006. This is a conservative estimate based on retained students carrying a part-time load of 6 credit hours.

Table 8: Potential Revenues from QEP

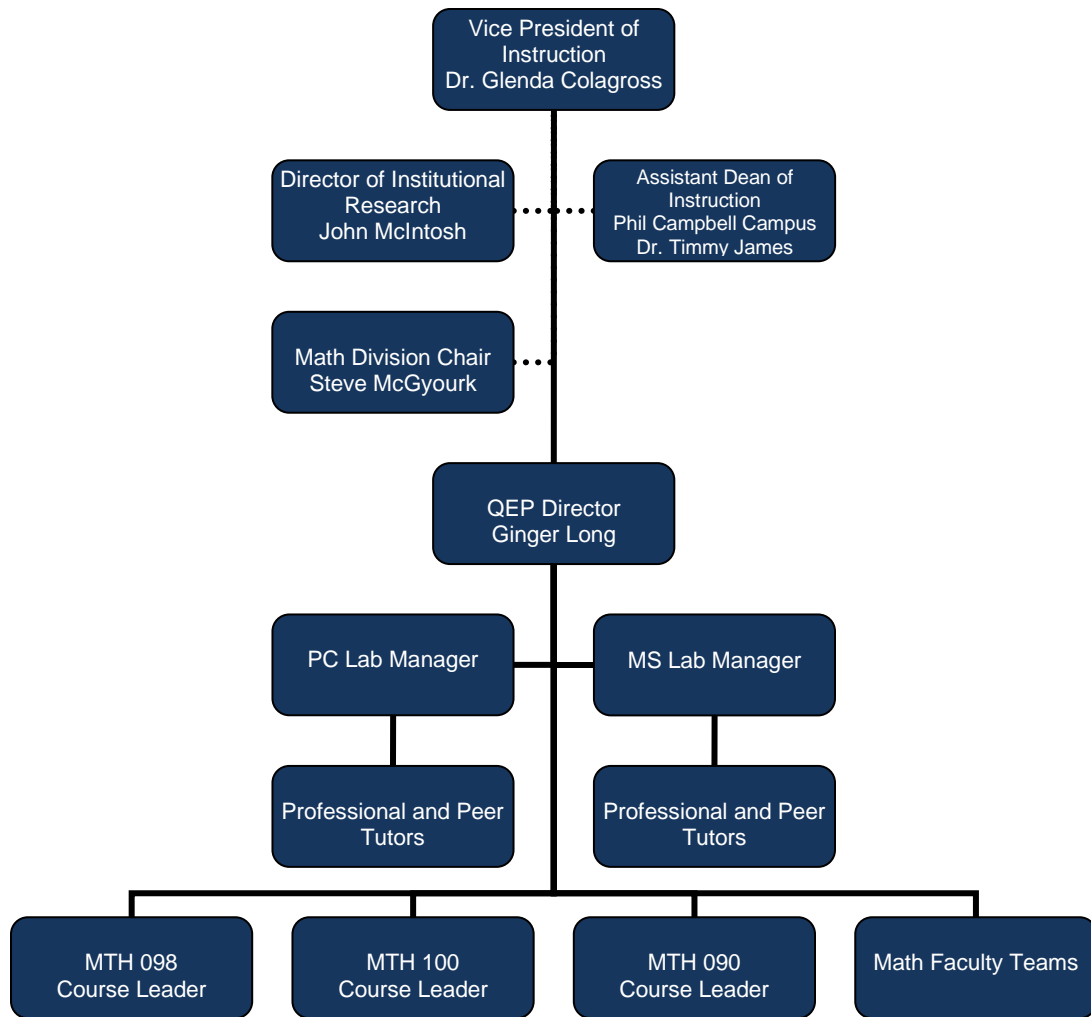
	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006
Math 090 Enrollment	222	223	180	146	142
Actual Success Numbers 5 Year Average = 23%	51	61	52	26	24
Projected Success Rate Average @ 33%	73	74	59	48	47
Additional Students @ 6 Credit Hours	22	13	7	22	23
Potential Tuition & Fees Generated *	\$12,822	\$7,552	\$4,262	\$12,776	\$13,167

	Fall 2002	Fall 2003	Fall 2004	Fall 2005	Fall 2006
Math 098 Enrollment	468	403	409	322	353
Actual Success Numbers Average = 41%	214	175	171	113	127
Projected Success Rate Average @ 50%	234	202	205	161	177
Additional Students @ 6 Credit Hours	20	27	34	48	50
Potential Tuition & Fees Generated *	\$11,520	\$15,264	\$19,296	\$27,648	\$28,512
Total Potential Tuition & Fees Math 090 and 098 *	\$24,432	\$22,516	\$23,558	\$40,424	\$41,679
*based on 2007-08 tuition and fees (\$96/credit hour)					

The potential increase in revenue averages approximately \$30,500 per semester.

Organizational structure:

The QEP will be integrated into the College's organizational structure. The QEP Director will report directly to the Vice President of Instruction. The course leaders and math faculty teams for Math 090, 098, and 100 will report directly to the QEP Director. Professional and Peer Tutors will report to the respective lab managers.



QEP Organizational Chart

ASSESSMENT OF THE PLAN

Over the next five years, the impact of *Strengthening Mathematical Foundations Through Innovative Teaching* will be assessed. The decisions

which will guide the project through its implementation, progression, and conclusion will be based on the results of those assessments. The goals which have been identified are clearly stated. The progress toward achievement of the goals will be quantified via assessment of the outcomes. Ms. Ginger Long, Director of the QEP, and John McIntosh, Director of Institutional Research, will be responsible for ensuring all evaluations are completed. Collection of data and reporting of results will follow the College's regular planning and evaluation cycle.

Formative and Summative Evaluation

The Director of the QEP will ensure that both formative and summative evaluations will be completed.

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

Summative Evaluation: The quantitative and qualitative data which is gathered over the course of the QEP project will provide a longitudinal analysis that will prove whether the selected methods have been effective. In accordance with SACS requirements, at the end of the fifth year, a summary report will be submitted to the Commission which will examine how well the goals and

outcomes were met, as well as the overall impact of the QEP on the institution and student learning.

Assessing the QEP Purpose, Goals, Objectives, and Outcomes

Shown in Table 9 are the purpose and goals of the QEP.

<i>Table 9: QEP Purpose and Goals</i>	
Purpose:	<i>Strengthening Mathematical Foundations Through Innovative Teaching</i> , will increase student learning by creating a best practices environment of teaching and equipping developmental faculty with the knowledge, skills, and abilities to engage students in active learning.
Goal 1:	To improve student learning in developmental math courses by redesigning courses to include innovative and engaging teaching strategies.
Goal 2:	To improve faculty knowledge, skills, and use of innovative pedagogy as learning facilitators by providing additional professional development opportunities.

The effectiveness of innovative teaching and learning methods will be assessed at the end of each fall and spring semester. In addition to the submission of results and use of results in the College's regular planning and evaluation system, the results will be reported each August to the appropriate administrative personnel for monitoring of the QEP. This procedure will allow for any necessary adjustments to the pilot program based on the evidence presented. There will be two primary areas of assessment – innovative and engaging teaching strategies and professional development.

Assessing the Effectiveness of Goal 1: To improve student learning in developmental math courses by redesigning courses to include innovative and engaging teaching strategies.

First, the common course exam results as well as COMPASS results of the pilot group will be compared with the baseline data gathered for MTH 090, MTH 098, and MTH 100 to determine the effectiveness of the pilot program. In addition, surveys will be completed by students to determine the perceptions related to the innovative teaching strategies and learning methods through changes in their attitudes toward math. The project personnel will monitor usage of the academic success center and student retention rates enrolled in developmental math courses. It is projected that there will be a significant improvement in the success rate of students who participate in the pilot programs. Table 10 shows the objectives and outcomes related to innovative teaching and learning methods along with baseline benchmarks.

<i>Table 10: Innovative Teaching and Learning</i>		
		Target
Goal 1	To improve student learning in developmental math courses by redesigning courses to include innovative and engaging teaching strategies.	
Outcome 1-1a	To increase by 10 percentage points the common course exam scores of students in MTH 098 compared to fall 2008 baseline data.	10%
Outcome 1-1b	To increase by 10 percentage points the common course exam scores of students in MTH 100 compared to fall 2009 baseline data.	10%
Outcome 1-1c	To increase by 10 percentage points the common course exam scores of students in MTH 090 compared to fall 2010 baseline data.	10%
Outcome 1-2a	To improve exit COMPASS math scores in targeted sections compared to entry placement scores: *70% of MTH 098 students will improve their exit COMPASS scores to the MTH 100 level	70%
Outcome 1-2b	To improve exit COMPASS math scores in targeted sections compared to entry placement scores:	70%

	*70% of MTH 100 students will improve their exit COMPASS scores to the MTH 110 or MTH 112 level;	
Outcome 1-2c	To improve exit COMPASS math scores in targeted sections compared to entry placement scores: *70% of MTH 090 students will improve their exit COMPASS scores to the MTH 098 level.	70%
Outcome 1-3	To improve student attitudes toward math as measured by a pre-post assessment tool.	TBD
Outcome 1-4a	To improve student success in developmental math courses as measured by course retention rates. Target: To increase the percentage of students who begin in MTH 098 and who complete gatekeeper courses MTH 100 or MTH 116 from 41% to 50% by 2012.	50%
Outcome 1-4b	To improve student success in developmental math courses as measured by course retention rates. Target: To increase the percentage of students who begin in MTH 090 and who complete gatekeeper courses MTH 100 or MTH 116 from 21% to 31% by 2013.	31%
Outcome 1-5	To improve student engagement in math learning support as measured by student survey or usage records. Target: 90% of students enrolled in MTH 090, MTH 098, and MTH 100 will frequently use the academic success center as reported by student survey or usage records by 2013.	90%

Assessing the Effectiveness of Goal 2: To improve faculty knowledge, skills, and use of innovative pedagogy as learning facilitators by providing additional professional development opportunities.

Crucial to the success of the QEP is to have a group of faculty which has been well trained in innovative teaching methods, active learning strategies, and student learning styles. Professional development will be assessed at the end of the academic year. Table 11 shows the goals and outcomes related to professional development.

Table 11: Professional Development

		Target
Goal 2	To improve faculty knowledge, skills, and use of innovative pedagogy as learning facilitators by providing additional professional development opportunities.	
Outcome 2-1	To improve the knowledge of math faculty toward alternative and innovative teaching strategies (pre-post testing)	TBD
Outcome 2-2	To improve the use of multiple alternative and innovative teaching styles (instructor self-reporting)	TBD
Outcome 2-3	To increase by 90% the number of math faculty who complete a master teacher program focusing on the implementation of alternative and innovative teaching styles in developmental math courses.	90%

CONCLUSION

The NW-SCC QEP project involves a crucial discipline to student success – mathematics. An adequate level of skill in math is necessary for students to persist toward success in gatekeeper math courses and subsequently to graduate with the certificate or degree which they are pursuing. Obviously, success in the foundational math course is the first step in that objective; nevertheless, perhaps the most crucial assessment is whether or not the work completed in foundational math courses prepares students for the gatekeeper courses of MTH 100 or MTH 116 which are often the courses which pose the most risk for students to complete a degree. As the overall project is assessed, the successful completion of the foundational math courses may conceivably be the key element to determining the success of the QEP.

References

- Bell, James. 2003. *Ideas for Teachers*. Retrieved January 24, 2008 from Educators Reference Desk database available at http://classweb/howardcc.edu/jbell/all_college_teachers.htm
- Benjamin, Ludy T., Jr. 1991. *Personalization and Active Learning in the Large Introductory Psychology Class*. *Teaching of Psychology*. 18: 68-74.
- Benson, J. (2008). *Redesign of Developmental Mathematics*. The National Center for Academic Transformation. Powerpoint presentation linked from: <http://www.center.rpi.edu/RedesignAlliance/Agenda08.htm>.
- Blackner, D. (2000). *Prediction of community college students' success in developmental math with traditional classroom, computer-based on-campus and computer-based at a distance instruction using locus of control, math anxiety, and learning style*. Dissertation. North Texas State University.
- Bok, Derek. 2006. *Our Underachieving Colleges*. Princeton, NJ: Princeton University Press.
- Bonwell, Charles C. and Tracey E. Sutherland. 1996. *The Active Learning Continuum: Choosing Active Learning Activities to Engage Students in the Classroom*. In Tracey E. Sutherland and Charles C. Bonwell, eds. 1996. *Using Active Learning in College Classes: A Range of Options for Faculty*. San Francisco: Jossey-Bass Inc.
- Bonwell, Charles C. and James A. Eison. 1991. *Active Learning: Creating Excitement in the Classroom*. ASHE-ERIC Higher Education Report No. 1, Washington, D.C.: The George Washington University, School of Education and Human Development.
- Boylan, Hunter R. (Unknown date). *Graduate attributes: why and how*. National Center for Developmental Education. Retrieved from <http://www.ncde.appstate.edu>
- Boylan, H. R., (2002). *What Works: Research-Based Best Practices in Developmental Education*.
- Boylan, H., L. Bliss, & B. Bonham. 1997. *Program Components and Their Relationship to Student Performance*. *Journal of Developmental Education*, 20(3). 2-9.

- Boylan, H., & D. P. Saxon. 1998. *An Evaluation of Developmental Education in Texas Colleges and Universities*. Austin, TX: Texas Higher Education Coordinating Board.
- Boylan, H. R., & Saxon, D.P. (1999) Outcomes of Remediation. Prepared for the League for innovation in the community college. Retrieved June 18, 2008, from http://www.ncde.appstate.edu/reserve_reading/Outcomes_of_Remediation.htm
- Furner, J. M., & M. L. Duffy. (2002). Equity for all students in the new millennium: Disabling math anxiety. *Intervention in School & Clinic*, 38(2), 67-74.
- Fadali, M.S., Velasquez-Bryant, N., & Robinson, M (2004). Work in progress – is attitude toward mathematics a major obstacle to engineering education? Prepared for the 2004 Frontiers in Education Conference. Retrieved June 27, 2008 from <http://fie.engrng.pitt.edu/fie2004/papers/1090.pdf>
- Halpern, D. and M. Haskel. (2003) *Applying the Science of Learning to the University and Beyond*. *Change*. Jul/Aug 2003, 35 (4), 36-42.
- Higbee, J. L., & P. V. Thomas. (1999). *Affective and cognitive factors related to mathematics achievement*. *Journal of Developmental Education*. 23(1), 8-14.
- Kozeracki, C. A. (2002). ERIC review: Issues in developmental education. *Community College Review*, 29(4), 83-100.
- Littleton, R. (2000). *The Impact of Developmental Education: Myths and Misconceptions*. ERIC Document 454470.
- McKeachie, Wilbert J. 1998. *Teaching Tips: Strategies, Research and Theory for College and University Teachers*. Boston: Houghton-Mifflin.
- National Center for Academic Transformation. Program in Course Redesign: The University of Alabama. Retrieved November 14, 2007 from http://www.center.rpi.edu/PCR/R2/UA/UA_Overview.htm.
- National Center for Academic Transformation. Five Principles for Successful Course Redesign. Retrieved May 22, 2008 from http://www.center.rpi.edu/PlanRes/R2R_PrinCR.htm
- National Center for Education Statistics. (2000) *Remedial education at degree-granting institutions in fall 2000*. Washington, DC: U.S. Department of education. Retrieved February 4, 2008 from the NCES web site: http://nces.gov/surveys/peqis/inc/displaytables_inc.asp

Roueche, J. E., Roueche, S. D., & Ely, E. E. (2002, November). A centralized approach to developmental education: A collegewide strategy for student success. *Southern Association of Community, Junior, and Technical Colleges Newsletter*, 37(1), 5-16. (ERIC Document Reproduction Service No. ED474345)

Shannon, Terrie M. 1986. *Introducing Simulation and Role Play*. In Steven F. Schomberg, ed. *Strategies for Active Teaching and Learning in University Classrooms*. Minneapolis: University of Minnesota.

Smith, Karl A. 1986. *Cooperative Learning Groups*. In Steven F. Schomberg, ed. *Strategies for Active Teaching and Learning in University Classrooms*. Minneapolis: University of Minnesota.

Smittle, P. (2003). *Principles for effective teaching in developmental education*. *Journal of Developmental Education*. 26(3), 10-14.

Terenzini, Patrick T. and Ernest T. Pascarella. 1994. *Living with Myths: Undergraduate Education in America*. *Change*. January/February, 1994: 28-32.

Van Amburgh, J., J. Devlin, J. Kirwin, and D. Qualters. 2007. *A tool for measuring Active Learning in the Classroom*. *American Journal of Pharmaceutical Education*. Oct 15;71(5):85.

Wright, G.L., R.R. Wright, & C.E. Lamb, (2002). *Developmental mathematics education and supplemental instruction: Pondering the potential*. *Journal of Developmental Education*. 26(1), 30-35.

Zemelman, S. H. Daniels, and A. Hyde. (1998). *Best Practice: New Standards for Teaching and Learning in America's Schools*, 2nd ed. Portsmouth, N.H.: Heinemann.

APPENDICES

Appendix A
Letter from Dr. Lee Soliciting Topic Suggestions



Office of the President

Humphrey Lee, Ed.D.
President

TO: Faculty & Staff
FROM: Humphrey Lee, President
DATE: July 5, 2006
SUBJECT: Quality Enhancement Plan

I invite you to participate in an endeavor with the goal of improving Northwest-Shoals Community College. As we begin the SACS reaffirmation efforts, one of the new requirements is for the college to develop and carry out a Quality Enhancement Plan (QEP). SACS describes the QEP as "a carefully designed and focused course of action that addresses a well defined issue or issues directly related to improving student learning." The college will commit resources over a five year period to develop and complete a carefully designed QEP project.

Over the next few months, the QEP planning team will be asking for QEP topic suggestions via focus groups, surveys, open discussions, and an online suggestion box. I encourage you to participate in this important project to ensure that we select a topic that will result in significant improvement of student learning experiences and the college's academic environment.

To suggest a QEP topic visit this website:
<http://www.nwscc.edu/qepwebsite/suggestqeptopic.html>

If you would like to see QEP topics chosen by other colleges visit this website:
http://www.nwscc.edu/qepwebsite/qepplanning_topicsources.pdf

"Where Excellence Counts"

Shoals Campus | P.O. Box 2545 | Muscle Shoals, AL 35662 | 256/331-5200 | Fax 256/331-5222
Phil Campbell Campus | 2080 College Road | Phil Campbell, AL 35581 | 256/331-6200 | Fax 256/331-6272

Appendix B

Quality Enhancement Plan Topic Survey

QUALITY ENHANCEMENT PLAN TOPIC SURVEY

The following categories and topics resulted from focus groups that included faculty, staff, students, and alumni. There are 8 categories with topics listed in alphabetical order. Please rank the choices in the order that you believe are most important to least important, with most important being ranked 1 and least important being ranked 8. At the end of the survey, there is a place for you to suggest another topic for consideration.

I am: () Faculty () Staff () Administration () Student

Rank	Category and Topic
_____	<p>Category: Critical Thinking Suggested Topic: Suggested Topic: Critical Thinking Across The Curriculum: A Key To Student Learning And Success</p>
_____	<p>Category: Developmental Education Suggested Topic: Successful Learning from every ANGLE: MATH, ENGLISH, READING, LEARNING SUCCESS CENTER, COLLEGE SUCCESS</p>
_____	<p>Category: Distance Education Suggested Topic: Overcoming Time, Location, and Delivery Barriers to Learning: A Strategic Plan for Innovative Distance Learning</p>
_____	<p>Category: Humanities and Arts Suggested Topic: Fostering a Scholarly Community: Rediscovering the Value of Arts and Humanities for Students and Area Residents.</p>
_____	<p>Category: Innovation for Teaching Suggested Topic: Where Instructors Teach and Students Learn: A Strategic Plan for Student Learning and Scholarship Through Innovative Teaching.</p>
_____	<p>Category: Student / Faculty Engagement Suggested Topic: Improving Student Learning Via Faculty and Student Engagement.</p>
_____	<p>Category: Student Services Suggested Topic: Improving Student Success and Retention by Student Interaction With Orientation, Advising, and Tutoring</p>
_____	<p>Category: Technology Suggested Topic: NWSCC on the Cutting Edge: Communication and Technology Across the Curriculum</p>

Topic Suggestion for QEP: _____

Appendix C

QEP Topic Survey Results

QEP Topic Survey Results

	Most Important	Very, Very Important	Very Important	Somewhat Important	Important	Not Very Important	Not Important	Least Important	Total
1. Innovation for Teaching - Where Instructors Teach and Students Learn: A Strategic Plan for Student Learning and Scholarship Through Innovative Teaching	23	12	10	12	9	8	10	3	
Points	184	84	60	60	36	24	20	3	471
2. Student/Faculty Engagement - Improving Student Learning Via Faculty and Student Engagement	11	14	13	14	10	12	5	8	
Points	88	98	78	70	40	36	10	8	428
3. Developmental Education - Successful Learning from Every ANGLE: Math, English, Reading, Learning Success Center, College Success	12	12	10	14	11	10	9	9	
Points	96	84	60	70	44	30	18	9	411
3. Student Services - Improving Student Success and Retention by Student Interaction with Orientation, Advising, and Tutoring	21	9	10	4	8	11	11	13	
Points	168	63	60	20	32	33	22	13	411
5. Technology - NWSCC on the Cutting Edge: Communication and Technology Across the Curriculum	7	13	13	12	16	9	7	9	
Points	56	91	78	60	64	27	14	9	399
6. Critical Thinking - Critical Thinking Across the Curriculum: A Key to Student Learning and Success	12	12	12	9	11	5	18	6	
Points	96	84	72	45	44	15	36	6	398
7. Distance Education - Overcoming Time, Location, and Delivery Barriers to Learning: A Strategic Plan for Innovative Distance Learning	5	6	9	14	10	20	10	13	
Points	40	42	54	70	40	60	20	13	339
8. Humanities & Fine Arts - Fostering a Scholarly Community: Rediscovering the Value of Arts and Humanities for Students and Area Residents	3	7	7	4	11	10	10	35	
Points	24	49	42	20	44	30	20	35	264