VI: Impact Report of the Quality Enhancement Plan

1. QEP: “Reconceptualizing UAB’s Undergraduate Core Curriculum”
Reconceptualizing the undergraduate core curriculum is the focus of UAB’s QEP, which ensures that UAB students will have a solid foundation for academic success, professional achievement, and personal fulfillment. The Shared Vision of a UAB Graduate is one who demonstrates good communication skills, depth and breadth of knowledge, effective problem solving, and active citizenship. As a first step towards achieving this Vision, UAB focuses on enhancing writing, quantitative literacy (QL), and ethics and civic responsibility (ECR) throughout the undergraduate curriculum, thereby making the core curriculum more integral to all academic programs. Strategies to implement the QEP include enforcement of an orderly progression of academic coursework, a First Year Experience, mid-curricular courses that specifically include enhanced instruction, practice, and assessment of the targeted competencies, a required capstone, and a continuous cycle of assessment, intervention, and improvement for academic programs. (1)

2. Initial Outcomes of QEP with Intended Ultimate Goals
STUDENT LEARNING OUTCOMES with ultimate goals
A. Improved basic writing and math skills => students are better prepared for advanced courses
B. Improved competency in general writing, QL, and ECR => students will perform better in academic courses, internships, community service, and jobs
C. Improved competency in discipline-specific writing, QL, and ECR => students are better prepared for responsible citizenship and post-graduation transitions

INFRASTRUCTURE COMPONENTS with intended goals
A. Enforced early enrollment in composition and core math courses => minimize number of students who have not fulfilled basic composition and math core requirements by, respectively, 30 and 60 hours earned
B. Faculty leadership in QEP implementation and assessment => promote faculty ownership of QEP initiated curriculum changes and assessment
C. QEP grants, faculty workshops, online University Writing Web, and University Writing Center => support faculty integrating enhanced instruction, practice, and assessment of targeted competencies into new and existing courses
D. WEAVE on-line => heighten program accountability for collecting data that demonstrate student improvement in writing, QL, and ECR and/or that identify curriculum changes needed to improve student learning, part of a continuous cycle of assessment, analysis, and improvement

3. Significant Changes
Our QEP predicted that by Fall 2009 50% of freshmen would elect to be enrolled in highly structured learning communities that included a 25 person Freshman Seminar, freshman composition, and a math or science core course. In Fall 2006, UAB offered eight freshman
learning communities and adopted EBI’s First-Year Initiative survey (FYI) as the assessment Instrument. By using these data to identify areas needing improvement, there was significant improvement in many of the 15 FYI Factor scores the following year. For example, the mean for 2006 students reporting on Satisfaction with College was 5.08 (below the 5.51 mean for all participating institutions) whereas the mean for 2007 students was 5.64 (above the 5.57 mean for all participating institutions). There was similar improvement between the 4.53 mean of 2006 UAB students for Overall Course Effectiveness (below the 4.78 mean for all participating institutions) and the 5.11 mean for 2007 UAB students (above the 4.73 mean for all participating institutions).

Despite major publicity campaigns, student enrollment remained disappointing. Faculty offered twelve learning communities in Fall 2007, but only eight enrolled the minimum required ten students and enrollment was well below seating capacity in most cases. Challenges included a system that did not allow block registration, more entering students with AP credit in English, limited elective hours in some programs, and a perceived financial and time disadvantage in taking a freshman seminar that fulfilled no requirement.

To increase the number of students benefiting from key components integrated into learning communities while accommodating different programmatic restrictions, in Fall 2008 UAB expanded first year experience (FYE) options to include learning communities, a critical thinking course, and stand-alone FYE courses developed by a school or department. FYI scores for the expanded 2008 FYE options dropped significantly in almost every factor. A two-hour FYE faculty development workshop that reviews best practices for the required FYE modules was developed, and FYI data improved. In August 2010, the workshop was expanded to 5 ¼ hours and included concurrent sessions targeted at different audiences (learning community vs. stand alone FYE instructors, new vs. experienced instructors) and experienced FYE faculty as presenters. Between 2010 and 2011, FYI scores for the preceding Fall FYEs improved significantly in ten factors and improved slightly in four other factors. Based on feedback received from evaluations, the May 2011 FYE Faculty Workshop will be 7 ½ hours long and include a student panel.

In Fall 2009 taking and passing a FYE course in the first 24 credit hours at UAB became a university-wide freshman requirement. Despite great differences in format, maximum enrollments, and instructor rank and numbers, all FYE courses must include a common core of FYE learning outcomes and objectives that promote student retention and success, as well as three mandatory assignments.

School of Engineering FYEs illustrate both the evolution of FYE possibilities and the use of data for improvement. In 2006, the Engineering sponsored learning communities composed of four courses plus a lab and recitation section received middle to low FYI scores. Students felt such scheduling was too much like high school and failed to promote the college experience of meeting a wide range of new people. Engineering experimented with different combinations and numbers of linked courses over the next two years. Currently, its learning communities are stretched over two semesters: in the fall students take two linked courses, one of which covers all
FYE transition topics before introducing the range of engineering majors; and in the spring, a third course reinforces some transition topics within the context of information about the engineering process, engineering as a profession, and careers in engineering. With such annual review and restructuring, the restructured Engineering learning communities consistently earn among the highest FYI scores on multiple factors.

4. QEP’s Impact

STUDENT LEARNING:

A. Basic writing skills: The English department restructured its Freshman Composition sequence, instituted more faculty development, implemented changes to help retain adjunct faculty, and adopted more oversight over syllabi and textbooks. In 2007-08 and 2008-09 the department developed a systematic approach to measure changes in student writing between the start of EH 101 and the conclusion of EH 102. Because the measurement design controlled for multiple sources of variability and bias, it was possible to show statistically significant improvements in writing ability. The magnitude of the change was .58 out of 6 points the first year and .34 the second year. Overall, the scores were higher in 2008-09 than they were in 2007-08. Thesis development was emphasized in EH 102 when it was the only area where students failed to improve. (4)

In 2009-10 English faculty decided to change the assessment design by scoring only one untimed essay from each student at the end of EH 102 using a single rubric but letting assignments vary by course section. This created a situation where measures of improvement in learning can only be done by comparing one year to the next under conditions that introduced many uncontrolled variables. With advice from Planning and Analysis, the English department will ensure that each prompt will be accompanied by the exact same instructions on how to respond, ask for the same outcome, be written with the same logic, and be the same approximate length.

Basic math skills: The Department of Mathematics has a new Mathematics Learning Laboratory, revised curricula, hired instructors dedicated to pre-calculus math courses, and adopted procedures that closely monitor student progress. By Spring 2008, all sections of all pre-calculus math courses were converted to a restructured format using flexible hours, computer-based instruction and a Mathematics Learning Laboratory with some classroom contact and supplemental instruction as needed. As the first course so converted, MA 102 offers the most data on pre- and post-restructured format. Success rates averaged 43% for the three falls before restructuring; the success rate increased to 62% in Fall 2006 and 2007, to 75% in Fall 2008, and to 78% in Fall 2009. Similarly, the Fall 2009 success rates for MA 098, 105, 106, and 107 show significant improvement (28%, 32%, 28%, and 40% higher) over success rates in Fall 2005 before restructuring. (5)

Besides attendance, pass, and withdrawal data, Math uses student surveys and exam analyses to identify effective changes as well as components that need improvement, resulting in modified lesson plans, course format including amount of instructor contact, course materials, and even grade structure. For example, instructors observed that MA 098 students who had earned enough
credits to pass the P/NP course were not putting sufficient effort into the last few course topics. While not impacting passing rates, this caused a fall-off in overall student learning. Math changed MA 098 to an A/B/C course.

B. Targeted QEP competencies

**Writing and Quantitative Literacy:** Since 2004, a primary instrument for institutional assessment of writing and quantitative literacy has been the ETS Academic Profile (renamed the Measure of Academic Proficiency and Progress, and then the Proficiency Profile (PP)). Initially the short version was taken by a sample of seniors and freshmen. UAB solicited freshmen to take the two-hour standard form beginning in Summer 2007 and a cohort of seniors started taking that form in Spring 2008. Scores and proficiency classifications for the two versions are equivalent, so trends from 2004 through 2009 for both freshmen and seniors are observable.

The best indicators of student performance are the proficiency classifications because these can be linked back to specific learning outcomes provided by ETS. There are three proficiency classifications (Not proficient, Marginal, and Proficient) reported in three competencies (Reading/Critical Thinking, Writing, and Mathematics), each with three levels. PP data accumulated to this point allow us to assess value added between freshmen and seniors. By creating matched samples of freshmen and seniors using propensity scores it has been possible to show consistently that there is a significant improvement between freshmen and senior total scores and proficiency levels.

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**Diagram:**

Percentages of students designated as Proficient at the three levels in the three competencies 2004-2009
However, data for these past five years cannot be used to assess fully the impact of QEP initiatives on student learning addressed by the test because only about 50% of our seniors begin their academic career at UAB. To secure longitudinal data on improvement for native students and to increase student participation, in Fall 2007 UAB began to recruit freshmen into the Curriculum Assessment Support Team (CAST), a cohort of students who agree to take the PP as freshmen, rising juniors, and seniors. Members of each year’s CAST cohort accumulate credit hours at different rates. Of the original cohort that started in 2007, only 30 have taken the test three times. This has provided the first opportunity to examine longitudinal data and validate previous results that showed a clear difference between freshmen and senior cohorts who took the test in the same academic year. The results of a repeated measures analysis show statistically significant increases in the Total Score and each of the four subscores. For example, students show a significant gain in math between the freshman and junior years. Since the vehicles for delivering these competencies have been developed sequentially (FYE first, QEP designated courses second, and capstones last), we expect that the change between the junior and senior years for future CAST cohorts will reflect a similar increase. This should be accompanied by an increase in the numbers of students designated as Proficient at Math Level 3 as well. There are now three CAST cohorts in the pipeline, with each subsequent cohort being exposed to more curricular changes that emphasize the targeted competencies.

Since the PP assesses only some of our QL learning outcomes and does not include a writing sample, a committee began meeting in Spring 2009 to identify or develop additional instruments that could be administered in alternate years. The Fall 2010 CAST 400-member freshman cohort wrote an essay in response to the same ETS Criterion Online Writing Evaluation prompt and took the Core Competencies Assessment Test (CCAT), an in-house 46 item test on ECR competencies and those QL competencies not tested by the PP. On the written essay, UAB freshman generally performed best on the Mechanics section, which includes punctuation, and Style, which involves more aesthetic writing choices such as varied sentence length and active vs. passive voice. They generally performed worst in Usage, a category that includes word choice and proper article use, and Grammar, especially with respect to run-ons and fragments. The English department will continue to emphasize these areas in freshman composition. Comparative analyses of essays written by these same students as rising juniors and seniors will provide direct assessment of the effectiveness of our efforts to enhance writing. Data analyses of ECR and QL test items indicate the need for reworking of items that were either too simplistic or too ambiguous; but we expect that on-going administrations of improved test items will provide comparable insight into the effectiveness of UAB’s emphasis on these competencies.

Ethics and Civic Responsibility: This broad competency has proven the most difficult to assess. Although there can be quantifiable knowledge change about relevant components like the Academic Honor Code and current events, the more significant institutional goal is a behavioral change.

Initial exposure to an institutional emphasis on ethics and civic responsibility (ECR) occurs through a freshman discussion book. All freshmen are required to read a common Discussion Book and, the day before Fall term begins, attend a presentation by the author or relevant
individual and participate in a small group discussion facilitated by trained faculty and staff. Besides building community, the discussions introduce the concept of difficult dialogues and QEP competencies relevant to the book: 2005 *The Spirits Catch You and You Fall Down*; 2006 *The Kite Runner*; 2007 *All Over but the Shoutin’*; 2008 *Field Notes from a Catastrophe: Man, Nature, and Climate Change*; 2009 *Mountains Beyond Mountain*; 2010 *Outcasts United*; and 2011 *Thinking in Pictures*. A monthly dialogue series, campus and off-campus events, publications, and other activities have been used to extend discussion of relevant issues throughout the year.

Freshmen attendance at the author presentation and small group discussions has increased from 79.3% in 2005 to 96.7% in 2010. The chart below identifies the percentage of respondents to a student survey who felt the book had contributed “quite a bit” or “very much” to the ECR competencies related to their understanding of social, medical, or ethical issues; understanding of people of other racial, ethnic, and cultural backgrounds; awareness of the impact that global events have on their lives; and the likelihood of their engaging in difficult dialogues in class or with friends. Increasing percentages of those who feel comfortable with dialogue reflect successive revisions of the small group discussion template to foster practice of this desired classroom behavior and interaction.

One question directly related to the ECR emphasis of the particular book is added each year. 74% of respondents said *Mountains Beyond Mountains* contributed “quite a bit” or “very much” to being motivated to help others who are less fortunate than themselves. 59% of respondents said *Outcasts United* contributed “quite a bit” or “very much” to their thinking about American identity and America’s role in the world.

The most common standardized instrument to measure achievement in ethical competence is the *Defining Issues Test (DIT-2)*, which we began administering to a small sample of entering freshmen in Summer 2007 and graduating seniors in Spring 2008. For 2007, 2008, and 2009 freshmen groups, DIT-2 scores matched the Freshmen Norms group very closely with the predominant ethical schema being Maintaining Norms. A person operating from this schema is basing his or her decisions primarily on laws, conventions, and the social order. DIT-2 scores for the 2008, 2009, and 2010 senior groups were basically the same as those of the freshmen and thus significantly different from the National Senior Norms group on two of the three moral reasoning schemas. While there was a statistically significant effect on the N2 Index, a trend in the right direction, results are preliminary and more research is necessary before we can attribute changes to any systematic developmental differences between freshmen and seniors. (7) Interestingly, our
philosophy faculty members, who teach ethical reasoning, question the validity of the DIT in measuring ethical reasoning. We will be soliciting their help in either finding a new instrument or method for measuring ethical competence. This is an exciting area of new research for us especially since we have a Center for the Study of Ethics and Values in Science.

**Writing, QL, and ECR courses:** Designated writing, QL, and ECR courses are the major curricular vehicle for improving instruction in and assessment of QEP competencies. Every program is required to identify where their majors will take at least two writing, two QL, and two ECR designated courses between the FYE course and their capstone. The Writing, QL, and ECR Committees have so far approved 82 courses for writing designation, 87 for QL, and 77 for ECR.

Programs have reported that developing QEP designated courses and a capstone has caused them to review their curriculum and resulted in a more coherent and cohesive undergraduate experience that makes more obvious to students the intentional instructional development in their program plan. In other cases, the process of mapping course assignments and syllabi to determine where best to integrate writing, QL, or ECR into curriculum has also provided an opportunity for self-assessment across courses, resulting in departments deleting material that was overlapping in some courses and increasing the depth and breadth of content taught in other courses.

During 2009-10, the Writing, QL, and ECR Committees each conducted a pilot-feasibility study on using student artifacts from writing, QL, or ECR designated courses to assess QEP learning outcomes at the institutional level. Each committee collected and reviewed approximately 100 examples of randomly-selected, ungraded student work from across the disciplines. Besides procedural challenges, committees identified difficulties in assessing work across disciplines because of differences in disciplinary conventions, course level, definitions, and expectations. There were fewer challenges with assessing QL than with writing and ECR. Although this process is in its infancy, the ultimate goal is to identify common characteristics of mastery and sources of difficulty in the core competencies that cut across disciplines, and to use this information so faculty attention and university resources can be directed toward areas of particular need for enhancement. This faculty-based, course embedded assessment pilot is an important stage in developing a bottom-up culture of assessment across campus. The pilot project has led the committees to focus this year on clarifying the learning outcomes for each competency and revising the rubric used in reviewing applications for writing, QL, or ECR course designation since course designations must be renewed every three years.

**C. Discipline-specific QEP competencies:** The Schools of Nursing, Business, Engineering, and Education integrate the assessment of QEP competencies into the school-wide assessment each conducts for their professional accrediting agencies. Nursing seniors take the Comprehensive Assessment Technologies Institute examination, receiving a score and percentile ranking on eight subscales which are the same as the subscales on the NCLEX-RN licensure examination. Percentile rankings on the major subscales of the examination provide norm referenced data for use in quality improvement. Each semester the School of Business assesses writing competencies of all students in the core writing course BUS 350 using a common rubric. Assessment results for
Fall 2009 showed that 89% of students meet or exceed the school accreditation goal learning objectives as measured by this rubric. The area in which students score the lowest is then targeted for emphasis in BUS 350. Similarly, engineering programs directly and indirectly assess student learning in QL-related areas as part of ABET accreditation. When data showed a need to improve students’ ability to apply mathematical concepts to complex analyses, EGR 265 Mathematical Tools for Engineering Problem Solving was developed to replace MA 227 Calculus III and MA 252 Ordinary Differential Equations in all five curricula. Similarly, the Mechanical Engineering and Materials Engineering programs improved instruction regarding the impact of engineering solutions, which is one aspect of ECR, by requiring MSE 401 Materials Processing, which emphasizes safety, ethical responsibilities in manufacturing, cultural and ethical issues of off-shore supply chains, and environmental issues.

Some individual programs like Theatre also have discipline-specific accrediting agencies that impose guidelines for assessment or like Nuclear Medicine Technology rely upon student performance on national board/certification exams. Foreign Languages requires graduating seniors to take the national standardized Web Computer Adaptive Placement Exam (WebCAPE), which assesses language competency in terms of manipulating grammatical structures, vocabulary, etc. Because students have consistently met or exceeded achievement targets overall, the Department voted to raise the average target WebCAPE score from 525 to 550 in the Fall of 2009. Programs like Criminal Justice rely upon an ETS Major Field Test in the discipline to assess both disciplinary knowledge and QEP competencies like professional ethics. After the physics Major Field Test began to report results in only the areas of Introductory and Advanced Physics, the Physics department implemented course-embedded assessment and developed a new model of introductory-level training in scientific writing for Physics majors. The model is being implemented in the Modern Physics I-II Laboratories. Over two semesters, students receive introductory-level instruction on how to write documents reporting the results of Physics experiments in 6 writing exercises of increasing complexity, providing background for the professional-level writing to be developed in the capstone course.

Other programs administer locally developed instruments to assess disciplinary knowledge and QEP competencies. For example, Psychology seniors take in-house developed tests. After 2009 and 2010 seniors performed below expectations in statistical analysis, a faculty committee was formed and is meeting regularly to consider where statistics training can be enhanced in the Psychology BS curriculum. The outcomes quiz is also being evaluated to ensure it validly assesses student knowledge. The Department of Philosophy collects papers written by majors with between two and eight philosophy courses and by seniors. A committee of three assesses papers on argument presentation, argument analysis, overall coherence, and writing mechanics. In Spring 2010 the average increase in proficiency was 3% below the target goal of 25% improvement with argument analysis as the lowest scoring component. Each fall the assessment committee presents results to the whole department for discussion of action plans to address deficiencies.

Programs that do not use standardized tests can assess QEP competencies by analyzing student artifacts in capstone courses, a graduation requirement for all students graduating in 2013 or later.
Approved capstone courses must include discipline-specific aspects of writing, QL, and ECR. Student artifacts drawn from capstones will provide material for both programmatic and institutional assessment.

INFRASTRUCTURE:

A. **Enforced early enrollment**: In Spring 2010, 96.2% of degree-seeking undergraduate students with 30+ hours earned had fulfilled their core freshman composition requirements; 94% of degree-seeking undergraduate students with 60+ hours earned had fulfilled their core math requirement. These numbers exclude students in the University Honors Program, who fulfill core curriculum requirements through specialized interdisciplinary seminars.

B. **Faculty Leadership**: The Core Curriculum Steering Committee, 53% of whose members are faculty, oversees the QEP, awards QEP grants and approves courses for capstone designation. Faculty chair the Writing, QL, and ECR Committees. The Director of Core Curriculum Enhancement is an ex-officio member of all three committees constituted respectively of 100%, 63%, and 77% faculty. These committees identified university-wide learning outcomes for these three competencies, developed rubrics for QEP designated courses, review applications for QEP designation, and conducted a pilot assessment based on student work collected from QEP designated courses. (9) An electronic quarterly *QEP Newsletter* highlights QEP activities and personalities, shares assessment data, and invites service on QEP committees. (10)

C. **Faculty Resources**: About $209,000 in QEP grants has been awarded to faculty to enhance instruction, practice, and assessment of writing, QL, and/or ECR in mid-curricular courses or to departments to develop a capstone course or integrate discipline-specific writing, QL and ECR into an existing capstone. (11) This amount includes a Core Commitments grant ($25,000) from Association of American Colleges & Universities to enhance ECR in mid-curricular and capstone courses. Additional resources have been provided by two Difficult Dialogues grants ($100,000 and $60,000) from the Ford Foundation, the first to help develop our pilot freshman learning communities and train faculty in facilitating difficult dialogues and the second to promote ECR by integrating difficult dialogue pedagogy into sophomore core classes and by supporting co-curricular events that used student produced ethnographic films to promote dialogue about community and diversity issues.

To support curricular development, the Office of Core Curriculum Enhancement sponsors (1) monthly FYE Brown Bag series for those teaching or interested in developing a FYE; (2) May and August FYE Faculty Workshops on best practices; and (3) monthly Conversation on Capstones where one department shares best practices and challenges in developing and/or enhancing a capstone. The Office has also sponsored five campus visits by the Duke University’s Director of Writing Across the Curriculum and two campus visits by the Director of the Rutland Center for Ethics, Clemson University, to run workshops for faculty on integrating writing and ethics assignments, respectively, into courses. The Office has promoted QL through a QL Awareness Week, guest speakers and faculty panels on integrating QL into courses, and a campus Discussion Book (*Field Notes from a Catastrophe*) and events highlighting QL.
Since fall 2008, all students in EH 091, EH 101, and 102 are required to purchase a customized textbook that includes a code good for five years’ access to an online University Writing Web maintained by Pearson. Faculty in other disciplines are encouraged to include this textbook on syllabi so all students can benefit from resources at this site: composition textbook, technical support, tutorials on avoiding plagiarism, and discipline-specific writing materials from UAB faculty and units. Since January 2010, a University Writing Center has been open part-time, providing individual writing in the disciplines tutoring, as well as writing workshops for students and faculty.

D. WEAVE: Since Fall 2007 all academic and administrative units are expected to enter annual information on mission, goals, achievement targets, measures, findings, and action plans into WEAVE Online, the University’s learning outcomes database. The Office of Planning and Analysis runs multiple workshops on writing learning outcomes, identifying satisfactory measures, etc. WEAVE online allows programs to link what they are doing to the learning outcomes for the QEP.

5. Concluding Statement: UAB undertook an ambitious QEP designed to strengthen foundational skills and competencies perceived as essential for student success by changing campus attitudes and creating a significant climate change. By developing a required First Year Experience which provides an initial introduction to writing, QL, and ECR expectations; mid-curricular courses that highlight writing, QL, or ECR learning outcomes; and capstones in each major with discipline-specific aspects of these targeted competencies, these core curriculum/general education competencies have become the shared responsibility of all faculty. This campus-wide focus on the importance of writing, QL, and ECR for all students regardless of major is beginning to be reflected in assessment data that demonstrate achievement levels and value added in these competencies.

(1) Executive Summary, QEP document, pp. 1-2,
(2) 5-Year Longitudinal Comparison of FYI Factor Data
(3) FYE Learning Outcomes
(4) Freshman Composition Assessment Report 2006-07
   Freshman Composition Assessment Report 2007-08
   Freshman Composition Assessment Report 2008-09
   Freshman Composition Assessment Report 2009-10
(5) Pre-calculus Math Cumulative Progress Report, Fall 2005-Spring 2010
(6) CAST 2007 Cohort Report
   Defining Issues Report for 2009
   Defining Issues Report for 2010
(8) Writing Designated Courses; QL Designated Courses; and ECR Designated Courses
(9) QEP Membership lists
(10) Archive of QEP Newsletters
(11) Financial History of QEP Grants and List of QEP Grant Awards