

University of Houston-Clear Lake
Quality Enhancement Plan (QEP)

Applied Critical Thinking (ACT) for Lifelong Learning and Adaptability



On-Site Review Copy
February 2012



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Section 1: Executive Summary

As the University of Houston-Clear Lake (UHCL) continues to prepare its students for the twenty-first century, it recognizes the necessity of equipping them with the proper skills to succeed in a rapidly changing environment where the ability to reason and adapt to new information is vital. To this end, UHCL has developed a Quality Enhancement Plan (QEP) topic of Applied Critical Thinking for Lifelong Learning and Adaptability. The need for students to develop Applied Critical Thinking (ACT) skills has been identified through the internal analysis of student data, intensive discussion among UHCL constituents (i.e., faculty, staff, students), and several national reports conducted by external professional communities and organizations. By addressing this need, UHCL will not only enrich the quality of its students' educational experiences, but it will also promote a synergistic relationship between the university and the larger Houston-Galveston metropolitan area.

The heart of UHCL's QEP for Applied Critical Thinking for Lifelong Learning and Adaptability is a curriculum revision project that will incorporate key critical thinking skills, concepts, and activities into courses, based on the best practices of several other institutions and organizations. Such skills and practices will form the framework for redesigning the curriculum, helping the university to develop a common definition of Applied Critical Thinking as well as classroom activities that foster these skills in every undergraduate student.

The goals of UHCL's QEP are:

- To increase the Applied Critical Thinking skills of students.
- To ensure that faculty have the support and resources they need to increase the Applied Critical Thinking skills of students.

Thus, the key student learning outcomes of the QEP are:

- Students will use *curiosity* to identify a particular problem or area of interest within a discipline.
- Students will make *connections* to their particular issues or problems based upon evidence acquired by research methodologies and citation methods within the discipline.
- Students will demonstrate *creativity* through a divergent mental approach exploring original alternative views/solutions.
- Students will *communicate* outcomes through writing and/or presentations.

The QEP will assess students' development of ACT skills at the course, program, school, and university levels through the collection and analysis of assessment data by standardized means.

The Cornell Critical Thinking Skills Test–Level Z (CCTST-Z) will be the selected university-level assessment instrument at UHCL, measuring on a routine, yearly basis both incoming and outgoing undergraduate students from all four schools—the School of Business (BUS), the School of Education (SoE), the School of Human Sciences and Humanities (HSH), and the School of Science and Computer Engineering (SCE). The approach UHCL will take to assess student learning outcomes is to use Facione's (1990) research (using a UHCL product rubric) and Ennis's (1993) research (using the CCTST-Z), along with the National Survey of Student Engagement (NSSE), Graduate Student Survey (GSS), and Alumni Survey (AS) to triangulate data with respect to Applied Critical Thinking. These five assessment tools will allow the collection of ACT data from multiple perspectives. In addition, a UHCL communication rubric will be used to assess communication skills, making a total of six assessment instruments (three direct and three indirect).

Undergraduate students will be assessed with these instruments and data will be collected before the implementation of ACT courses as well as periodically after the implementation of ACT courses in order to collect pre-test and post-test data. In addition to the CCTST-Z, both a product and a communication rubric will be used to assess individual course-embedded student work artifacts. These work artifacts and their scores will be collected using a computerized online process developed by UHCL's University Computing and Telecommunication's department. This process will provide sufficient storage space and easy access of the artifacts and data for future use, when necessary. While these rubrics will be standardized, there will still be enough flexibility in their structure for faculty to customize their assessment to the specific demands of each discipline. This combination of standardization and flexibility will enable the university to measure the student learning outcomes mentioned above using formalized assessments of Applied Critical Thinking skills across the university, while faculty use the collected data to continue developing their curricula and teaching strategies to better incorporate ACT skills.

Faculty will be afforded ample opportunities to attend professional development workshops and conventions, both on- and off-campus, that center on strategies for teaching and assessing ACT skills. Ultimately, by full implementation, the entire campus community will be involved in the QEP, and everyone will benefit from UHCL's commitment to teaching Applied Critical Thinking skills.

In order to ensure that this project achieves its goals, a QEP Leadership Team (QLT) will provide oversight of the implementation and ongoing evaluation of the effort, modifying the initial design and implementation when needed. This team will consist of various constituents of the university (i.e., faculty, staff, and students). It will also review and approve courses submitted for ACT status and plan, design, as well as implement ACT workshops.



Through these activities, the university hopes to instill critical thinking in all of its students, so that the knowledge they gain during their academic careers at UHCL can translate directly into real world career experiences. In doing so, university will enhance the educational quality of its graduates and, in fulfillment of its mission, provide a benefit to the larger community through the contributions of these graduates.

Section 2: University of Houston-Clear Lake Overview

- Background
- Mission Statement
- Strategic Plan

Although a young university, the University of Houston-Clear Lake has served with distinction its mission of providing quality higher education programs to Houston-Galveston metropolitan communities along the upper Gulf Coast of Texas and beyond. In doing so, the university has continued to assess its achievements and adopt innovative teaching and learning strategies to create better opportunities for its graduates and the community.

Background

The University of Houston-Clear Lake (UHCL) is an independent, upper-level (i.e., juniors, seniors and graduate students) university, located in the Galveston Bay region of Texas. UHCL was established in 1974 adjacent to NASA's Johnson Space Center, initially to serve the academic needs of employees and contractors of NASA and the local high-technology industries. UHCL has since grown into a comprehensive university enrolling over 8,000 students in 40 bachelor's degree programs, 44 master's degree programs, and one doctoral degree program among its four schools: Business, Education, Human Sciences and Humanities, and Science and Computer Engineering. The majority of UHCL undergraduate students (80%) transfer from eleven surrounding community colleges. UHCL continues to expand its offerings to meet the needs of its students and the community, and it was recently authorized by the State of Texas for downward expansion to begin enrolling freshmen and sophomores. The success of this expansion to lower-level undergraduates "will be actualized by the University of Houston-Clear Lake's rich compendium of class offerings and regionally specific degree paths support of a curricular strategy whereby civic engagement and service learning is woven through scope and sequence of the general educational core. This strategy reinforces a community-minded, partnership-oriented institution that can only be strengthened by extension of these values to freshman and sophomore classes" (University of Houston-Clear Lake, 2011, p. ii). The earliest possible year of implementation is fall of 2014.

Since opening its doors in 1974, the university has awarded more than 51,000 degrees. UHCL serves a diverse population, drawing students from primarily Harris County (47.3%), Galveston County (17.7%) and Brazoria County (12.7%). A significant portion of UHCL students are first-generation (37%), low-income (16% of students receive some type of Title IV support), and minority (10% African American and 25% Hispanic). UHCL recently became an eligible Hispanic-serving institution. About 64% of students are female. The typical UHCL undergraduate student is non-traditional, meaning older (average student age just over 30), working, and often with family responsibilities.

Mission Statement

The [mission statement](#) of the University of Houston-Clear Lake defines its purpose and primary objectives:

The University of Houston-Clear Lake is a student-centered, community-minded, partnership-oriented university that offers bachelor's, master's and selected doctoral programs to enhance the educational, economic, and cultural environment of the Houston-Galveston metropolitan region. UH-Clear Lake serves a diverse student body with special emphasis on undergraduate transfer, graduate and international students. The university offers the highest quality instruction and nationally accredited academic programs designed to develop the critical thinking, creative, quantitative, leadership and communication skills of students. The university conducts applied and basic research and engages in community and professional service that support both the economic development and the quality of life of the area. The university is committed to community engagement through partnerships with educational institutions, businesses, government agencies, and nonprofit organizations.

In fulfilling its mission statement, the university emphasizes high academic standards for learning in undergraduate, graduate, and professional programs through teaching, research, scholarship, and professional and community service. UHCL also delivers educational opportunities through new instructional technologies and distance learning. UHCL holds multiple disciplinary accreditations from the following agencies: the Accreditation Board for Engineering and Technology (ABET), the American Association for Marriage and Family Therapy (AAMFT), the American Chemical Society (ACS), the Association to Advance Collegiate Schools of Business (AACSB), and the National Council for Accreditation of Teacher Education (NCATE).

In its short history, UHCL has earned a distinctive reputation as a community-minded, partnership-oriented university. In 2009, UHCL received the Carnegie Foundation Classification for Community Engagement. In addition, UHCL was named in the 2009 and the 2010 President's Higher Education Community Service Honor Roll, the highest federal recognition a college or university can receive for its commitment to volunteering, service-learning, and civic engagement. UHCL has developed partnerships with area businesses, organizations, schools, and individuals (e.g., the City of Pearland, Clear Creek Independent School District, Interfaith Caring Ministries, and the Houston Food Bank) that enhance the region's educational, economic, cultural, scientific, engineering, and professional environment. The university's numerous institutes and centers, such as the Environmental Institute of Houston, Center for Autism and Developmental Disabilities, Center for Educational Programs, Psychological Services Clinic, and the Center for Advanced Management Programs, reflect UHCL's commitment to community service.

Strategic Plan

In addition to fulfilling its mission, the University of Houston-Clear Lake has developed a [strategic plan](#) to meet four overriding goals:

Goal 1: The University of Houston-Clear Lake will achieve academic excellence through the offering of high quality programs delivered by an outstanding faculty and staff in an environment supportive of teaching and research.

Goal 2: The University of Houston-Clear Lake will provide a supportive student-centered campus environment focused on student access and success.

Goal 3: The University of Houston-Clear Lake will enhance a campus which is attractive, functional, safe, and supportive of the university's mission; promote an environment for effective collaboration; and maintain fiscal responsibility.

Goal 4: The University of Houston-Clear Lake will build mutually beneficial partnerships through outreach activities for faculty, staff, students, alumni, and the community.

All components of the university are guided by these goals in their academic and administrative plans.

Section 3: Development of Quality Enhancement Plan (QEP)

- Topic Selection
- Topic Development
- QEP Topic: Applied Critical Thinking for Lifelong Learning and Adaptability
- Rationale for Applied Critical Thinking Topic
- Broad-based Support
- Demonstration of Need

Topic Selection

The University of Houston-Clear Lake (UHCL) engaged in a comprehensive process to select and develop a relevant issue for its Quality Enhancement Plan (QEP), based on current UHCL data that would result in improvement of student learning. The QEP Preparation, Selection, and Development Timeline is summarized in Table 1, and lists the dates for university-wide mail outs and various presentation dates regarding the development of the QEP topic.

In spring 2010, the QEP Topic Selection Committee, with representatives from the four schools as well as university staff and student organizations, was organized to conduct the selection process of UHCL's QEP topic. This selection process extended through the summer of 2010 and included background information about the QEP's purpose, evaluation criteria for selecting a QEP topic, and university-wide requests for QEP topic proposals. Moreover, the Topic Selection Committee made presentations about the request for QEP proposals to the four schools and to staff and student organizations. These organizations included the Faculty Senate, Administration and Finance, Student Services, the Professional and Administrative Staff Association (PASA), the Support Staff Association (SSA), and the Student Government Association (SGA). Once the QEP topic on critical thinking was selected, information about the topic, the QEP Topic Selection Committee, the committee's minutes, and the QEP Timeline were posted to the UHCL QEP website. Included on the website was a feedback mechanism that enabled the university community to provide comments about the QEP topic.

The value of the critical thinking skills topic was underscored by the UHCL Faculty Senate as early as 2003, when it defined critical thinking as “the mastery of higher order thinking skills including quantitative and qualifying analysis, synthesis, and evaluation of information, argumentation, problem solving, and creativity” (p. 4). In its QEP, UHCL has refined this statement to conceptualize and formalize elements of critical thinking pedagogy across the university. This formalization includes the development of common vocabulary, common language, common assessments, and common instructional practices of critical thinking skills through quality professional development. In addition, UHCL's QEP focuses on the application of critical thinking skills so that students are able to develop these skills in course assignments and have the disposition to use them.

Table 1: QEP Preparation, Selection, and Development Timeline

2009/2010	UHCL representatives attended SACS workshops and meetings to address the QEP topic process.
2009/2010	The Office of Institutional Effectiveness (OIE) compiled data to serve as resources to identify potential QEP topics.
2009/2010	Ongoing presentations and discussions of the reaccreditation process and the QEP occurred at multiple university assemblies to inform faculty and staff about the process. For instance, on February 22, 2010, a university-wide workshop with faculty and staff was conducted to discuss the process of formulating a QEP topic related to UHCL. Dr. Gerry Dizinno, Associate Vice Provost at the University of Texas at San Antonio, was the presenter.
2009/2010	The Office of the Provost established a SACS committee with representatives from each of the four UHCL schools. This committee met on a regular basis to discuss the reaccreditation process.
Spring 2010	The Office of the Provost established the QEP Topic Selection Committee with representatives from the four UHCL schools, Faculty Senate, Administration and Finance, Student Services, Professional and Administrative Staff Association (PASA), Support Staff Association (SSA), and the Student Body. The QEP Topic Selection Committee developed the format for the university-wide request for QEP topic proposals, as well as a rubric for evaluating it.
Spring 2010	A request for QEP topics was disseminated university-wide, along with a required format (Brief Description of the Topic, Rationale for Topic Selection, Desired Student Learning Outcomes, Actions to be Implemented, and Assessment). Distribution as well as presentation/explanation of the Request for QEP Topics included electronic delivery (i.e., e-mail) and presentations at multiple meetings, such as those of the Council of Chairs (COC), Student Services, Professional and Administrative Staff Association (PASA), and Student Government Association (SGA).
Spring 2010	The Office of the Provost created the position of QEP Director and established a search plan to fill it. Kevin Barlow, newly hired director, joined UHCL in July 2011.
Summer/Fall 2010	The QEP website was developed to post QEP information and to obtain feedback.
Summer/Fall 2010	The QEP Topic Committee reviewed QEP topic proposals using a rubric. The topic developed was the <i>Applied Critical Thinking for Lifelong Learning and Adaptability</i> . This topic was placed on the QEP website for all UHCL stakeholders to review and provide comments. The topic was a recommendation to the Offices of the President and Provost, and was approved as the QEP topic.
Fall 2010	The Office of the Provost established the QEP Steering Committee. Four subcommittees were established: Needs Assessment, Promotion, Implementation, and Assessment to develop the QEP Topic.
Fall 2010- Summer 2011	The QEP Steering Committee developed and refined the QEP topic in collaboration with university stakeholders through four subcommittees: Needs Assessment, Promotion, Implementation, and Assessment.
Fall 2011- Spring 2012	The QEP document was reviewed by members of the QEP Leadership Team, finalized, and submitted to SACS for approval.

The QEP topic addresses SACS Core Requirement 2.12 to develop “an acceptable Quality Enhancement Plan (QEP) that includes an institutional process for identifying key issues emerging from institutional assessment and focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution” (Southern Association of Colleges and Schools Commission on Colleges, 2009, p. 19).

Topic Development

Once the QEP Topic was selected and posted on the UHCL QEP Website for review and comment during the fall 2010 semester, the university established the [QEP Steering Committee](#) with representatives from the four UHCL schools, Business Office, PASA, SSA, Sponsored Programs, Neumann Library, Student Services, Office of Planning and Assessment (OPA) and the student body.

During spring and summer 2011, multiple meetings of the steering committee were held to develop and refine the QEP topic in collaboration with university stakeholders. Addressing the required format, the QEP Steering Committee developed and refined the QEP topic through the four subcommittees: (1) Needs Assessment; (2) Promotion; (3) Implementation; and (4) Assessment.

QEP Topic: Applied Critical Thinking for Lifelong Learning and Adaptability

In keeping with the university’s mission and strategic plan, UHCL has chosen the topic of Applied Critical Thinking for Lifelong Learning and Adaptability for its Quality Enhancement Plan. Applied Critical Thinking (ACT) means that students not only know how to think critically, but they also have the disposition (or temperament) to do so, and they apply their critical thinking skills on a daily basis. As such, UHCL’s focus is on the daily application of critical thinking skills in the classroom through an emphasis on real-life examples. Accordingly, selected assignments and assessments will be completed successfully with the application of critical thinking skills. This topic addresses a key need in the student body as identified through analysis of student data, as well as through extensive discussion among faculty, staff, and students. The development of ACT skills has also been identified as an important academic and professional need in national reports (e.g., The Association of American Colleges and Universities, the College Board, the National Association of Colleges and Employers). In addition, ACT skills will help students to become lifelong learners and be able to adapt to economic and societal changes.

Critical thinking is an essential tool of inquiry that uses techniques of interpretation, analysis, evaluation, and inference of evidence to make reflective, purposeful judgments (Facione, 2011). The application of critical thinking involves a reasoning process that seeks understanding about open-ended issues or problems, where the creative mind exercises adaptability and flexibility in using a divergent thinking approach (Guilford, 1967; Kurfiss, 1988). Furthermore, the practice of argumentation can work to determine preferred solutions to ill-structured problems (Jonassen & Kim, 2010).

These definitions suggest that applied critical thinking requires curiosity, connections, creativity, and communication (4Cs) in the context of an academic community. As a result, the university has identified these 4Cs as key qualities to characterize Applied Critical Thinking for its QEP:

- *Curiosity* is a constant questioning about our environment and ourselves, which is characterized by both a sense of wonder and doubt. The elements of curiosity are a strong *desire to know* more, a keenly observant eye, and a careful mind.
- *Connecting* is the ability to see how disparate types of ideas, information, and data fit together: noting consistencies and contradictions, assessing bias, and evaluating credibility. Developing connections may include formulating categories, creating frameworks, or clarifying meaning in ways that will lead to greater understanding.
- *Creativity* is the ability to interpret the world in unique and unconventional ways, and contemplate innovative approaches. Creative thinkers are risk takers who are not afraid to follow an idea into unexpected directions, often evoking a sense of wonder and joy.
- *Communication* is the successful and effective expression of thoughts, interpretations, evaluations, findings, and/or arguments using presentation skills, writing skills and/or visual images. Successful communication includes the ability to relay complex content clearly and concisely.

In short, *curiosity* piques students' interest to investigate a particular critical idea or problem. Students then draw *connections* of the evidence through logical inquiry, seeking understanding. During this examination process, students demonstrate *creativity* through a divergent mental approach exploring original alternative views/solutions (Guilford, 1967). Students *communicate* outcomes of their reasoning, problem solving, or argumentative process through writing and oral presentations.

Rationale for Applied Critical Thinking Topic

The implementation of UHCL's QEP in the context of testing ideas and/or addressing problems will provide opportunities for UHCL students to apply critical thinking skills to their daily assignments, assessments, projects, and other academic work with the end goal that these skills will transfer over into real life. The improvement in critical thinking skills, along with communication skills, is in line with UHCL's Mission Statement: "The university offers the highest quality instruction and nationally accredited academic programs designed to develop the critical thinking, creative, quantitative, leadership and communication skills of students." Furthermore, the University Life Committee's Core Values Statement and various goals of the UHCL Strategic Plan (see below) also include the critical thinking process as a major component. For example, innovation addresses the development of creativity and critical thinking. However, while encouraging critical thinking is a worthy goal, it does not have practical meaning or benefit unless it is *applied* to specific situations in an appropriate manner. To this end, UHCL promotes critical thinking skills through student-centered

activities that invite hands-on involvement in real-world problem solving. Accordingly, UHCL has garnered the support of both internal and external constituents, embracing the responsibility of preparing its students to be lifelong learners, who are academically sophisticated as well as adaptable to changes in a dynamic job market. Ultimately, this synergy between education and real-world experience forms the crux of UHCL's QEP.

Broad-based Input and Support

University Input and Support

As noted earlier, multiple strategies garnered broad-based input and university support during different stages of QEP topic selection and QEP development. For example, to gain the wider participation of the university community, [committee minutes](#) were placed on the [UHCL QEP](#) website for public review. A university-wide process to determine the QEP topic was conducted (see Appendix A) and the QEP proposals were placed on the QEP website for review and comment. Many meetings to discuss the QEP topic and process were held over eighteen months with multiple university constituents including the four schools, faculty senate, staff organizations, and student groups (see Appendix B).

The importance of critical thinking has been noted in many different ways at UHCL. In the university's shared governance process, the constituencies have highlighted the importance of critical thinking in UHCL's [mission statement, core values, and strategic plan](#) to guide the growth of the university. The focus on critical thinking in these governing documents has been instrumental in developing a dialogue in support of the QEP.

The core values of the university guide its decisions and behaviors with regard to promoting learning, scholarship, and service. Of the eight core values—learning, trust, integrity, opportunity, diversity, leadership, quality, and innovation—two in particular, learning and innovation, underscore UHCL's commitment to Applied Critical Thinking for Lifelong Learning.

- **Learning:** UHCL inspires all individuals within the university community to pursue lifelong learning through a dedication to intellectual and personal growth.
- **Innovation:** UHCL supports innovation through the development of creativity and critical thinking.

Moreover, various goals of the 2010 UHCL Strategic Plan emphasize the critical thinking process.

- **Goal 1:** University of Houston-Clear Lake will achieve academic excellence through the offering of high quality programs delivered by an outstanding faculty and staff in an environment supportive of teaching and research.

Objective 5: Support increased levels of applied and basic research as well as creative activities.

- **Goal 2:** University of Houston-Clear Lake will provide a supportive student-centered campus environment focused on student access and success.

Objective 6: Develop the critical thinking, creative, quantitative, leadership, and communication skills of our students.

External Support

The broad consensus among external constituents is that critical thinking is among the essential outcomes of higher education.

- **State Government:** The Texas Higher Education Coordinating Board (THECB) has been working on redefining general education objectives through the work of the Undergraduate Education Advisory Committee. The committee proposed six core objectives, including “Critical Thinking Skills, to include creative thinking, innovation, inquiry, and analysis, evaluation, and synthesis of information” (THECB, 2011, n.p.). In support of this objective, the THECB has “supported the creation of” an online professional development module for educators in the area of critical thinking. In its 2010 report to the governor on “Higher Education Cost Efficiencies,” the THECB recommended that “Institutions should be able to demonstrate that their graduates have achieved mastery of disciplinary knowledge and basic intellectual skills such as critical thinking, effective communication, and the ability to synthesize substantial amounts of information and data” (p. 5).
- **The Higher Education Community:** Echoing the government’s position, the higher education community places a high value on teaching critical thinking skills. Derek Bok, President Emeritus of Harvard University (as cited in Stein & Haynes, 2009), said in 2005 that “National polls indicate over 90% of the faculty in this country think critical thinking is the most important part of undergraduate education” (p. 6). Additionally, the Association of American Colleges and Universities (2007) delineates “essential learning outcomes” for the 21st century. Included among these outcomes is critical and creative thinking, one of six components of intellectual and practical skills that should be “practiced extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance” (p. 3).
- **Employers:** Another constituency in support of critical thinking skills is the group of employers of college graduates. Not satisfied with only discipline mastery, employers seek to hire students with critical thinking skills. A 2008 national survey commissioned by the Association of American Colleges and Universities questioned employers on essential learning outcomes for college graduates. In the classification of “not well prepared,” 31 percent of the employers indicated new hires are not skilled or knowledgeable in critical thinking (p. 3).

Furthermore, a publication from the Conference Board (2006), reports the results of a survey of U.S. employers. One of the top four “most important skills cited by employers” for new

hires is critical thinking/problem solving; other skills are professionalism/work ethic, oral and written communication, and teamwork/collaboration. These skills are considered even more important than basic knowledge and skills, such as reading or math (p. 9).

Likewise, in “Job Outlook” (2000), research by the National Association of Colleges and Employers indicates that analytical skills and problem-solving skills are ranked fourth and sixth among important candidate skills and qualities respectively. A research report by Chambers, Munday, Sienty, and Justice (1999) also found that the best predictor of performance on the Professional Development section of the Examination for the Certification of Educators (ExCET) is critical thinking abilities.

The QEP draws upon this research and addresses the need to develop strong critical thinking skills among its graduates.

Demonstration of Need

UHCL undergraduate assessment data shows a clear need for further developing the critical thinking skills of students while they are at UHCL, as illustrated in the information below (See also Appendices C and D).

Educational Testing Service (ETS) Proficiency Profile Multiple Year Data

The Educational Testing Service Proficiency Profile (formerly the MAPP: Measure of Academic Proficiency and Progress Test) is administered annually in the spring to incoming junior-level students at UHCL to measure college-level skills in critical thinking, reading, writing, and mathematics. Since UHCL is a designated upper-level institution with upper-level undergraduate and graduate degree programs and does not teach freshman or sophomores, this test is particularly important in providing a benchmark for academic preparedness of incoming UHCL students, all of whom are transfer students with at least 54 undergraduate hours. Ideally, a minimum of two measures of selected students using this assessment would be collected so that a pre/post analysis of the data could be conducted to show value-added; however, this has not previously been the practice at UHCL. This QEP will provide the structure and resources to implement a pre/post analysis model. The ETS Proficiency Profile’s critical thinking questions are designed to measure the students’ abilities to do the following:

- Distinguish between rhetoric and argumentation in a piece of nonfiction prose
- Recognize assumptions
- Recognize the best hypothesis to account for information presented
- Infer and interpret a relationship between variables
- Draw valid conclusions based on information presented. (Educational Testing Service, 2010, p. 4)

The results suggest that critical thinking skills for UHCL students as they enter the institution are disappointing: for the five cohorts of students from fall semesters of 2006-2010, 94 percent of the 545 students tested were classified as either marginal or not proficient in critical thinking skills (see Appendix C). The ability to apply critical thinking remains a

major concern for UHCL's first-time transfer students. The test results for a recent, single semester (spring 2010) show a small, but statistically negligible improvement in critical thinking (compared to the prior five cohorts); 90 percent of the 63 students tested were classified as either marginal or not proficient (see Appendix D). The sample size is small since this is not a mandatory assessment.

Thus, for any one semester a relatively small percentage of students entering UHCL take the ETS Proficiency Profile, but the results across a number of semesters show a consistent trend. UHCL students have disappointingly low levels of critical thinking when they enter the university.

Student Surveys

Surveys conducted by UHCL's Office of Institutional Research (OIR) provide data on student perceptions. Three surveys are particularly relevant: the Graduate Student Survey (GSS), the Alumni Survey (AS), and the National Survey of Student Engagement (NSSE).

The GSS is a university-designed survey conducted at the end of the fall and spring semesters. The AS, also a university-designed survey, is conducted every two years and polls alumni for their student perceptions. The NSSE, a commercially-developed survey designed to evaluate student perceptions regarding their experiences while at the university, is conducted each spring with graduating seniors.

In both the GSS and the AS, students rate their responses on a 4-point Likert scale of Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1). On the NSSE, graduating seniors are asked to rate the extent to which UHCL contributed to their knowledge, skills, and personal development on a 4-point Likert scale of Very much (4), Quite a bit (3), Some (2), and Very little (1).

Among other questions, students are asked to evaluate their ability to think critically. While students' mean scores on the GSS and AS are slightly higher than the scores on the NSSE, UHCL students are consistently below the NSSE mean scores of comparable groups of the Southwest public universities, the Carnegie universities, and the entire NSSE test group. The data from the MAPP, NSSE, GSS, and AS, although measuring critical thinking from different perspectives, all point to the conclusion that UHCL needs to address critical thinking. Table 2 shows these survey comparisons.

University Learning Outcomes Assessment

Understanding the need and importance of critical thinking, UHCL faculty have been incorporating these skills within their courses. A review of the assessment plans in UHCL's Assessment Information Management (AIM) System found that approximately 80 percent of undergraduate degree programs identified critical thinking as one of the program-level learning outcomes. Almost all used course-embedded student work (e.g., portfolios, capstone projects, papers, exams, homework) to evaluate critical thinking skills. Therefore, the QEP topic of Applied Critical Thinking for Lifelong Learning and Adaptability, along with its supporting activities, will provide the means for faculty to further improve and verify the ACT skills of their students.



Table 2: UHCL Surveys – Critical Thinking

Source: Graduate Student Survey (FY08, FY09, FY10), UHCL Alumni Survey, and NSSE (2008, 2009, 2010)

Core Competencies	Graduate Student Survey			Alumni Survey			NSSE Comparison				
Critical Thinking	My program prepared me to think critically			Developed the ability to critically analyze and evaluate new ideas			Thinking critically and analytically				
	Year	No.	Mean	Year	No.	Mean	Year	UHCL	SW Public	Carnegie	NSSE
	2010	737	3.43	2010	324	3.46	2010	3.27	3.34	3.35	3.38
	2009	879	3.40				2009	3.36	3.37	3.33	3.33
2008	N/A	3.36	2008	52	3.42	2008	3.32	3.33	3.34	3.36	

Section 4: Plan Overview

- Ensuring Best Practice
- Student Learning Outcomes
- Description of Full QEP Implementation
- School Implementation
- Supporting the Plan
- Promoting the Plan

Ensuring Best Practice

A key component of UHCL’s QEP is to ensure that best practices are used when teaching Applied Critical Thinking skills. UHCL’s QEP will provide a number of opportunities for faculty to attend professional development activities focused on how to teach critical thinking skills. As a basis for these developmental activities, UHCL will use the work of one of the leading advocates for the promotion and training of critical thinking skills, the Berkeley, California-based Foundation for Critical Thinking (FCT). To support its efforts, the FCT provides a library of publications that target both student and faculty audiences. Interestingly, in the publication *A Critical Thinker’s Guide to Educational Fads* (2007), the table of contents lists the term “critical thinking.” Why would the Foundation’s key authors, Drs. Richard Paul and Linda Elder, list this concept as an educational fad? The authors explain this inclusion by arguing that even a concept as foundational to education as critical thinking can be misunderstood and misused. In fact, they also note that virtually all teachers erroneously believe that they understand and practice critical thinking already and that the problem of “uncritical” thinking is fundamentally that of their students (Paul, Elder, & Bartell, 1997). Paul and Elder (2007) explain that it is necessary to understand critical thinking at a deep level—one that recognizes it as fundamental to thinking within the disciplines and not simply as a set of skills that can be easily identified and taught as course content: “we teach critical thinking concepts as tools in entering into any system of thought, any subject of discipline. . . We acquire an array of classroom strategies that enable students to master content using their thinking and to become skilled learners” (p. 44).

UHCL’s QEP embraces the lifelong learning concept that such an understanding of critical thinking implies. Stephen P. Norris (1985) clearly articulates the faculty responsibility in this relationship when he states that teaching critical thinking skills is not an option, but a necessity. He argues that “students have a *moral right* to teaching that embodies the spirit of critical thinking and a *moral right* to be taught how to think critically” (p. 40). If UHCL wishes to create a teaching atmosphere that embodies the spirit of critical thinking, then the faculty must first acknowledge that, as much as they already know about critical thinking skills, they have more to learn, particularly regarding classroom teaching strategies; or, as Paul and Elder would put it, the faculty need to begin by cultivating some intellectual humility, by viewing new information about teaching practices with an open and curious mind. This means that the university must start its project by introducing key terms and concepts of critical thinking to faculty—terms and concepts they can all use in common—

and by providing multiple opportunities for faculty development. Fortunately, resources are abundant and available to faculty for this endeavor.

Investigating Critical Thinking Skills: The Delphi Report (1990)

In 1987, the American Philosophical Association asked Dr. Peter Facione, at that time the Dean of the College of Arts and Sciences at Santa Clara University, to convene a group of experts to investigate definitions of as well as teaching and assessment methods for critical thinking skills. This investigation, which took place over a two-year period and involved 46 experts, resulted in the definitions and recommendations contained in “The Delphi Report.” The committee’s detailed definition of critical thinking is inclusive of several of the specific skills the experts identified: “We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based” (Facione, 1990, p. 2).

The team of experts isolated the following six skills as those that make up the habits of mind engaged in by critical thinkers:

- Interpretation
- Analysis
- Evaluation
- Inference
- Explanation
- Self-Regulation (Facione, 1990, p. 7).

These skills have become the foundation for many of the instruments used to evaluate critical thinking skills. The U.S. Department of Education’s (2000) publication, *The NPEC Sourcebook on Assessment, Volume 1: Definitions and Assessment Methods for Critical Thinking, Problem Solving, and Writing*, uses a modified version of these skills, based on an extensive study, to evaluate most of these testing instruments. Undertaking this analysis required the publication break down the skills listed above into multiple sets of sub-skills. The result, when compiled from the charts in the document, is an extensive and exhaustive list of skills and sub-skills that can inform faculty about the many ways in which critical thinking may be encouraged and assessed (see Appendix E for the complete list of sub-skills).

Defining Critical Thinking

UHCL recognizes the need for a deep and complex understanding of critical thinking skills; however, because the university wants to promote common definitions and terms in its development of a project for multiple disciplines with diverse approaches to critical thinking, it needs to begin with an inclusive definition that will work well for everyone. To this end, the university has explored several definitions of critical thinking developed by experts on the topic and determined that the definition used by the FCT promises to be both easily remembered, yet complex enough to provoke a more detailed discussion of the skills involved in critical thinking. The FCT defines critical thinking as “self-guided, self-disciplined thinking which attempts to reason at the highest level of quality in a fair-minded

way” (Elder, as cited in Foundation for Critical Thinking, 2009, n.p.). The component concepts—“self-guided thinking,” “self-disciplined thinking,” “the highest level of quality,” and “fair-mindedness”—can be fully explored as faculty work with students to understand the ways in which developing critical thinking skills and a deep understanding of disciplinary knowledge work collaboratively.

Student Learning Outcomes

UHCL will ensure that all of the pedagogical tools are designed to assist students in developing ACT skills. As discussed in Section 3, student creativity and curiosity will be fostered; students will be taught how to make connections; and written and oral communication skills will be developed to assist students in using their ACT skills.

The goals of UHCL’s QEP are:

- To increase the Applied Critical Thinking skills of students.
- To ensure that faculty have the support and resources they need to increase the Applied Critical Thinking skills of students.

Thus, using the definitions of the 4Cs, the key student learning outcomes of the QEP are stated below. These learning outcomes will be assessed as described in Section 7.

- Students will use *curiosity* to identify a particular problem or area of interest within a discipline.
- Students will make *connections* to their particular issues or problems based upon evidence acquired by research methodologies and citation methods within the discipline.
- Students will demonstrate *creativity* through a divergent mental approach exploring original alternative views/solutions
- Students will *communicate* outcomes through writing and/or presentations.

As mentioned earlier, there has been much research conducted on critical thinking. However, each study emphasizes varying elements with different foci. UHCL will assess student learning outcomes using Facione’s research (using a UHCL rubric) and Ennis’s research (using the CCTST-Z), along with the NSSE, Graduate Student Survey, and Alumni Survey to triangulate data with respect to Applied Critical Thinking. Using these five assessment tools will allow the collection of ACT data from multiple perspectives. A UHCL communication rubric will be used to assess communication skills, making a total of six assessment instruments (three direct and three indirect). The details of the assessment of these learning outcomes are discussed in Section 7.

Description of Full QEP Implementation

Once the QEP is fully implemented, the majority of full-time faculty who teach undergraduate courses within and across each of the schools of the university will incorporate into one or more of their courses the best practices advocated by the Foundation for Critical Thinking for teaching ACT skills. These courses will be designated as ACT courses and will have the ACT logo affixed to their syllabi. Each of these courses will be focused on achieving the two learning outcomes mentioned above. These best practices and learning outcomes will be identified on the course syllabi.

As with most universities, some faculty members may already be using these best practices and assessing the learning outcomes in their courses. But, even those faculty members will benefit from further development of their teaching and assessment skills. More importantly, the QEP process will provide a university-wide approach to the development and assessment of critical thinking skills of undergraduate students, and graduate students as well, thus formalizing the teaching and application of critical thinking skills. It will provide faculty with additional professional development on teaching critical thinking skills along with additional resources to use such as common vocabulary, common language, common assessments, and common instructional practices of critical thinking skills. Ultimately, by full implementation, the majority of faculty members across all disciplines will have incorporated these strategies for teaching and assessing ACT skills into their courses.

The QEP Leadership Team (see Section 5) will ensure the quality of course materials and course assessments as they relate to Applied Critical Thinking skills. This team will evaluate and approve each ACT course using pre-defined ACT criteria. After a specific course has been identified as an ACT course and begins to employ the ACT strategies, the course syllabus will contain the Applied Critical Thinking logo. The ACT logo will readily identify the course as an ACT course to administrators, faculty, staff, students, and other stakeholders. Furthermore, the ACT logo will enable students to begin self-selecting courses identified as Applied Critical Thinking courses.

School Implementation

The First Four Years

As an upper- and master's-level institution with one doctoral program, the University of Houston-Clear Lake (UHCL) is different from most colleges and universities. Fewer and fewer institutions of higher education follow this model, with even UHCL's sister university, University of Houston-Victoria, recently adding lower division classes.

Given their disciplinary affiliations, the four schools of UHCL—the School of Business (BUS), the School of Education (SoE), the School of Human Sciences and Humanities (HSH), and the School of Science and Computer Engineering (SCE)—have different requirements for students in their undergraduate majors. BUS has a significant set of core courses that all undergraduate students are required to take; HSH and SoE have only a few required undergraduate courses; SCE has no common required courses. Undergraduate students stay at the university for only two years of coursework at the undergraduate level,

giving relatively little time to work with them. Furthermore, UHCL students are more likely to be non-traditional students with an average age of just over 30, outside jobs, and families to support. They come to the university with two years of college and many years of life experience. The latter can make a positive contribution toward developing their ACT skills, but their largely part-time status also means they are less available than traditional students for activities outside of the classroom.

These circumstances help form the design of the QEP with regard to curriculum development, assessment measures, and faculty involvement. Though ACT skills are foundational to all four schools, the manner in which they are taught is different for each discipline. For example, the biology program teaches interpretation through creating, comparing, and assessing scientific data. The literature program, on the other hand, teaches interpretation of textual data involving a far more subjective assessment enterprise or approach.

Simply put, the QEP will envelop the needs of the diverse instructional practices of each of UHCL's schools and disciplines; however, the core components of the plan will be consistent, and formalized, and include the development of common vocabulary, common language, and common assessments of critical thinking skills. In addition, the disposition of students to use critical thinking skills will be a common focus and the same learning outcomes throughout the university will be measured.

The implementation of the QEP plan at UHCL will occur in the following stages:

- ✓ Year 0 will be the pre-implementation year involving professional development, organizational meetings, development of ACT materials, and other preparatory activities (see Table 3 in Section 5).
- ✓ In Year 1, the School of Business (BUS) and the School of Science and Computer Engineering (SCE) will begin implementing Applied Critical Thinking undergraduate courses. Faculty will be invited to submit courses for approval by the QEP Leadership Team.
- ✓ In Year 2, the School of Education (SoE) and the School of Human Sciences and Humanities (HSH) will begin implementing Applied Critical Thinking undergraduate courses. Faculty will be invited to submit courses for approval by the QEP Leadership Team.
- ✓ In Year 3, the School of Business (BUS) and the School of Science and Computer Engineering (SCE) will add additional ACT undergraduate courses.
- ✓ In Year 4, the School of Education (SoE) and the School of Human Sciences and Humanities (HSH) will add additional ACT undergraduate courses (see Table 4 in Section 5).

Even though each school has different characteristics and the implementation of QEP across schools will be phased in over time, the focus will be common vocabulary, common language, and common assessments of critical thinking skills. While each school has an accrediting body that provides accreditation to at least one of its programs, it is noteworthy that the current focus of most accrediting bodies is critical thinking skills. This has provided additional support for the QEP from all four schools at UHCL.

Downward Expansion of the Institution

During the spring 2011 Texas legislative session, the University of Houston-Clear Lake was granted approval to pursue downward expansion. Pending SACS approval and appropriate funding, this change could happen as early as the fall of 2014. If UHCL elects to pursue downward expansion in 2014, the earliest date this would be possible, it will move the focus of Year 2 of the plan to the freshman core curriculum and shift Years 3 and 4 accordingly. Since HSH will be affected by downward expansion more than the other schools, it may also be necessary to shift HSH's implementation year to Year 3.

Year Five

UHCL will begin implementing its QEP assessment of learning outcomes (identified in Section 7) in Year 0 of the plan. This will yield assessment data of student learning outcomes before the implementation of new instructional strategies as well as after their implementation. The Office of Planning and Assessment will conduct ongoing formative assessments of student learning outcomes and ongoing formative assessments of the quality of plan implementation, making adjustments as needed. In Year 5, the Office of Planning and Assessment will conduct studies of the quality of implementation of the plan and the effectiveness of the plan with respect to improving the two identified student learning outcomes mentioned earlier. These studies will inform administrators, faculty, and staff of key components of success and key areas that need improvement. At that time, all faculty members from the four schools will be invited to revise their remaining undergraduate courses into ACT courses, as well as include graduate courses. In addition, by Year 5 the QEP Leadership Team and faculty members who have already implemented ACT courses will have set in place the infrastructure, resources, and processes to make this development process user-friendly for all faculty members.

Supporting the Plan

The university recognizes the importance of professional development and has planned ongoing support of its faculty beginning with introductory workshops and continuing throughout the five years with both internal and external opportunities.

Sustained Professional Development

Professional development is crucial to the success of the UHCL QEP for Applied Critical Thinking for Lifelong Learning and Adaptability. A detailed professional development plan will be implemented (see Tables 3 and 4 in Section 5) by the QEP Leadership Team with the heart of the plan being a two-day session conducted by the Foundation for Critical Thinking (FCT). The Foundation has developed extensive and thoroughly detailed workshops and curricula for faculty development programs, and its fellows are available to provide this

training as on-campus consultants. According to FCT Fellow Dr. Linda Elder (2004), creating an ongoing faculty development plan is essential to provide quality instruction in critical thinking: “Critical thinking, deeply understood, provides a rich set of concepts that enable us to think our way through any subject or discipline, through any problem or issue. With a substantive concept of critical thinking clearly in mind, we begin to see the pressing need for a staff development program that fosters critical thinking within and across the curriculum” (n.p.).

This annual FCT two-day session will be the pre-cursor to the development of additional ACT courses. This professional development plan includes ongoing opportunities for faculty members that complement this fundamental session. In other words, this professional development plan revolves around sustaining the initial concepts and best practices presented at the FCT session, while allowing the collaboration of participating faculty members. Professional development opportunities will also include brown-bag events and sessions for faculty members to share their work and experiences internally and externally. Faculty will be encouraged to attend and participate in workshops, conferences (e.g., webinars), and online courses, such as those offered by the Foundation for Critical Thinking and Tennessee Tech’s Center for the Assessment & Improvement of Learning. Faculty members who have already implemented ACT courses will be asked to mentor other faculty members as these newcomers begin to prepare and to teach ACT courses. These various opportunities for professional development will be an incentive for many faculty members to participate in the QEP.

Resources

For the implementation of the QEP, multiple resources will be provided to both faculty and students to address student outcomes. As indicated earlier, faculty will be provided professional development resources on best practices to expand their teaching of critical thinking skills. Moreover, faculty will be provided mentoring services, as well as course-related materials (e.g., sample syllabi, sample assessments, and research materials) to assist them. The various UHCL Centers such as the Student Success Center (See Section 6 for all the centers) will support the student learning process in developing critical skills. The directors and staff of the various centers will receive professional development to support the critical thinking activities. Along with these resources, faculty will be provided various types of incentives, including travel allowances for advanced professional development on critical thinking and presentations at conferences on critical thinking research (e.g., pedagogical practices of Applied Critical Thinking skills). Faculty will also receive credit on their annual reviews and toward tenure/promotion considerations. The faculty members of the QEP Leadership Team will receive stipends to compensate their time in reviewing course syllabi for their respective schools and in mentoring faculty.

ACT Website

The criteria for ACT course approval and course development materials will be made available to faculty through the ACT website. This bank of information will be enlarged each year as faculty members and programs develop new ACT courses and materials. All submissions to the website will be reviewed by the QEP Leadership Team before they are added to the site.



Initial materials will include the following:

- Criteria for ACT course approval
- Syllabus vocabulary
- Sample course syllabi
- Assessment materials
- Best practices for teaching ACT skills

Promoting the Plan

There was campus-wide involvement in the development of the QEP topic, slogan, and logo. Moreover, an ongoing educational process about the QEP will be maintained to ensure future stakeholders are familiar with the QEP. This educational process has already included the display of banners with the QEP topic/slogan/logo in multiple campus buildings and QEP information on hall TV monitors and on the screensavers of all campus public computers. Also, the QEP topic/slogan/logo will be displayed on the wallpaper of all public computers on the campus. This will ensure that there will be continual communication to all stakeholders about the critical value of the QEP.

Section 5: Project Management

- Administration of the QEP
- Roles and Descriptions
- Timelines
- Budget

Administration of the QEP

The Quality Enhancement Plan (QEP) will be co-chaired by a faculty member and the Executive Director of the Office of Planning and Assessment. The Faculty Co-Chair will work with faculty and provide faculty feedback to the Executive Director of Planning and Assessment. The Executive Director of the Office of Planning and Assessment is a newly created position at the University of Houston-Clear Lake (UHCL) and will administer daily operations of the plan. Approximately 70% of the duties of this position will be the new duties required of the QEP as described below. The remaining 30% will be assessment and planning related-duties absorbed from other positions. Both co-chairs will head the QEP Leadership Team (QLT). In addition, a newly created Senior Secretary position and a newly created Assessment Data Analyst position will provide support to these two co-chairs. See Figure 1 below for the QEP administrative/management organizational chart.

Roles and Descriptions

The QEP Leadership Team (QLT) will act as an oversight committee to the QEP process and will have the duties described below. The Faculty Co-Chair of this committee will work with the Executive Director of the Office of Planning and Assessment (OPA) to implement the plan. The roles and descriptions of QEP related positions are described below.

Senior Vice President for Academic Affairs and Provost

The Senior Vice President for Academic Affairs and Provost is responsible for all academic activities at the university.

Associate Vice President for Academic Affairs

In the absence of the Provost, the Associate Vice President for Academic Affairs (AVPAA) provides primary administrative supervision and guidance to all the academic leadership and administrative staff reporting to the Provost Office. The AVPAA is also designated as the SACS Accreditation Liaison and supervises the Executive Director for Planning and Assessment.

Executive Director for the Office of Planning and Assessment (OPA)/QEP Director (QLT Co-Chair)

The Executive Director of OPA reports directly to the Associate Vice President for Academic Affairs and has as its primary responsibility the daily operations related to the implementation of the UHCL QEP. Duties not related to the administration of the QEP are

limited to approximately 30% of this position's total responsibilities. Responsibilities of the QEP Director include the following:

- Collaborate with the Provost, Associate Vice President for Academic Affairs, Faculty Co-Chair, and Deans in providing a process for the selection of QLT members
- Collaborate with the QLT Faculty Co-Chair in setting periodic meeting times and agendas for such meetings
- Report to the QLT periodic evaluation, progress, and status of the QEP, so the QEP can be revised as necessary
- Write the annual SACS QEP report
- Direct the administrative duties associated with the QEP
- Act as liaison to upper level administrators: Provost, Associate Vice Presidents, and Deans
- Perform other assignments as needed for the success of the QEP process
- Direct planning and assessment processes

QEP Leadership Team (QLT)

The QEP Leadership Team will act in an advisory capacity to faculty and the QEP Director to ensure successful implementation of the QEP. Service on the QLT will provide members with additional professional development and greater insight to the UHCL ACT processes. The typical term on this committee will be two years (but can be extended) and staggered in approximately three equal groups; however, some initial terms may be longer until the staggered rotations are implemented. Other representatives will be chosen by their respective organizations. Membership of the QLT will include the following:

- Co-Chair (Faculty)
- Co-Chair (Administrator) – OPA/QEP Director—ex officio
- Faculty Members (Lead Faculty) - two from each school
- Faculty Senate Representative
- Library Representative
- Student Services Representative
- PASA Representative
- SSA Representative
- Student Representative
- The Associate Vice President of Academic Affairs—ex officio

Because the QLT is relatively large, smaller subcommittees may be created from this committee to address specific tasks. These subcommittees may also enlist the assistance of key UHCL personnel with expertise related to their specific subcommittee. Responsibilities of the QLT subcommittees include, but are not limited to, the following:

- Provide oversight of the implementation, evaluation, and revision of the QEP
- Act as liaisons between the QLT and their respective schools
- Review and approve annual SACS QEP
- Review and approve courses submitted for ACT status

- Assist faculty with assessing Applied Critical Thinking where needed
- Plan, design, and implement ACT workshops
- Collaborate with Student Research Conference Chair to incorporate ACT sessions into the Student Research Conference
- Provide oversight of the ACT website
- Perform other assignments as needed for the success of the QEP process

QEP Leadership Team (QLT) Faculty Co-Chair

The QLT Faculty Co-Chair will be appointed by the Provost's Office and will receive a stipend. Responsibilities of the QLT Faculty Co-Chair include, but are not limited to, the following:

- Collaborate with the Provost, Associate Vice President for Academic Affairs, Executive Director of the OPA, and Deans in providing a process for the selection of QLT members
- Collaborate with the Executive Director of the OPA in setting periodic meeting times and agendas for such meetings
- Lead the QLT as it assists faculty with the implementation of the QEP, as it periodically revises the QEP, and as it reviews and approves the annual SACS QEP report
- Organize QLT subcommittees as needed to carry out responsibilities of the QLT and assign members to such subcommittees
- Act as liaison to upper level administrators: Provost, Associate Vice Presidents, and Deans
- Perform other assignments as needed for the success of the QEP process

Lead Faculty/Faculty Senate Representative

Each school will appoint Lead Faculty for the QLT. A Faculty Senate Representative will also serve on the QLT. Service on the QLT will provide Lead Faculty and the Faculty Senate Representative with additional professional development and greater insight to the UHCL ACT processes. Each Lead Faculty member and the Faculty Senate Representative will receive a stipend. Responsibilities of the Lead Faculty and the Faculty Senate Representative include, but are not limited to, the following:

- Serve as School Representative on the QLT
- Act as liaisons between QLT and respective school
- Lead the critical thinking activities in their respective school
- Serve as mentors for new faculty
- Perform other assignments as needed for the success of the QEP process

Senior Secretary to the Office of Planning and Assessment

The Senior Secretary will perform secretarial duties associated with the QEP implementation, such as creating Word documents, maintaining Excel spreadsheets, setting up meetings (e.g., QLT meetings), posting information to the website, disseminating information to internal and external stakeholders, taking minutes, and performing other duties as they occur. These

duties will help maintain the ongoing effectiveness of the QEP process. This position will report to the Executive Director of Planning and Assessment.

Assessment Data Analyst

The Assessment Data Analyst will provide technical expertise in the development, implementation, and management of assessment data solutions for the Office of Planning and Assessment. This position will collect and analyze data related to the QEP processes helping to maintain an efficient and effective QEP. This position will report to the Executive Director of Planning and Assessment.

Student Worker

The Student Worker will provide a maximum of 20 hours of clerical assistance per week to the Office of Planning and Assessment. This position will report to the Executive Director of Planning and Assessment.

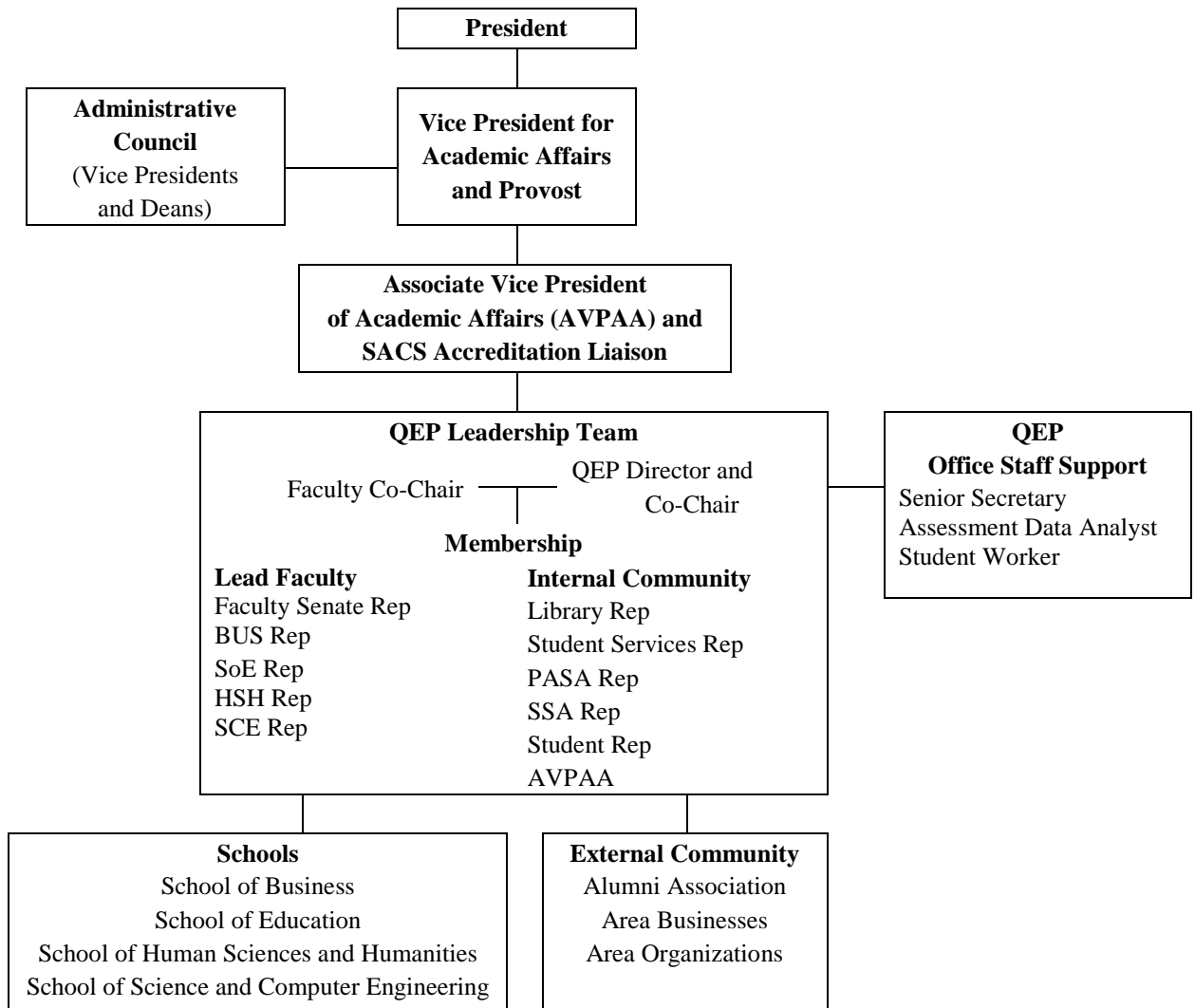


Figure 1. QEP Organizational Structure

Timelines

Activities for implementing ACT skills into UHCL courses are divided into three components: 1) pre-implementation and ongoing activities, 2) ACT course implementation activities, and 3) assessment activities.

Pre-implementation and ongoing activities (see Table 3) are activities that begin building a common understanding of ACT skills among administrators, faculty, staff, students, and other stakeholders. These activities will also begin to build and make available resources for faculty as they implement ACT skills into their courses.

ACT course implementation activities (see Table 4) are activities that will assist faculty as they develop their specific course into an ACT course. Each year of the plan, another set of courses will be developed into ACT courses. These activities will provide detailed steps for faculty as they make these revisions for their specific courses.

Assessment activities (see Table 5) are activities that will be used to take periodic measures of student learning outcomes associated with ACT skills. The Office of Planning and Assessment will oversee sampling, assessing, and reporting of these learning outcomes.

Note on Assessment of Implementation

In addition to the assessment activities described in Table 5 related to the assessment of student learning outcomes, UHCL will also assess the quality of the QEP implementation process. Data will be collected with respect to whether implementation activities occurred as planned, whether they achieved the outcomes they were designed to achieve, as well as quality and success of professional development. These activities are not described in a timeline as they will be ongoing throughout the QEP implementation process.

Budget

UHCL is dedicated to a successful implementation of its QEP as can be seen by the allotted budget (see Table 6). This budget is new money to carry out the UHCL QEP ACT plan. It summarizes the activities listed in the timelines above as well as other administrative costs. Below is a summary of the planned budget followed by Table 6: Budget.

Personnel

As mentioned earlier, three new positions are dedicated to UHCL's QEP. The new position of Executive Director of Planning and Assessment (also the QEP Director) will dedicate 70% of its time to the QEP. The new position of Senior Secretary for the Office of Planning and Assessment (100% assignment to QEP) will provide secretarial support to the QEP Director and the Faculty Co-Chair of the QLT. A full-time dedicated Assessment Data Analyst will provide assessment and analysis support to the Office of Planning and Assessment. In addition, funds are budgeted for a student worker to provide 20 hours of clerical support to this office.

**Table 3: Pre-Implementation and Ongoing Activities Timeline**

	Activity	Resources	Participants	Cost
Sep 19, 2011	Deploy QEP logo and slogan on TV monitors	Logo/slogan PowerPoint slides	QEP Director, UCT	---
Sep 28, 2011	Present QEP Overview to Faculty Assembly	PowerPoint presentation	QLT Co-Chair, Faculty Assembly	---
Sep-Dec 2011	Present QEP Overview to each School Faculty	PowerPoint presentation	QEP Director, QLT Co-Chair, School Faculty	---
Oct 24, 2011	Order and hang banners with QEP logo and slogan	Logo/slogan banner template	QEP Director	\$1,620
Nov 28, 2011	Deploy QEP logo and slogan on public computer screen savers	Logo/slogan information	QEP Director, UCT	---
Dec 7, 2011	Present QEP Overview to Faculty Senate	PowerPoint presentation	QEP Director, QLT Co-Chair, Faculty Senate Rep	---
Jan 16, 2012	Deploy logo and slogan on public computer wallpaper	Logo/slogan information	QEP Director, UCT	---
Jan 17 & 31, 2012	Present QEP Details to SGA	PowerPoint presentation	QEP Director, QLT Co-Chair, SGA	---
Feb 2012	Distribute pens/pencils with logo and slogan (1000)	Pens/pencils	QEP Director	\$3,000
Feb 2012	Distribute flyers with logo and slogan (1000)	Flyers	QEP Director	\$500
Feb 1, 2012	Deploy QEP logo and slogan on UHCL marquee	Logo/slogan information	QEP Director	---
Feb-Mar 2012	Present QEP Details to each School Faculty	PowerPoint presentation	QEP Director, QLT Co-Chair, School Faculty	---
Mar 2012	Present QEP Details to Faculty Senate	PowerPoint presentation	QEP Director, QLT Co-Chair, Faculty Senate Rep	---
Mar 2012	Present QEP Details to Library Staff	PowerPoint presentation	QEP Director, QLT Co-Chair, Library Staff	---
Mar 2012	Present QEP Details to Student Services Staff	PowerPoint presentation	QEP Director, QLT Co-Chair, Student Services Staff	---
Mar 2012	Present QEP Details to PASA	PowerPoint presentation	QEP Director, QLT Co-Chair, PASA	---
Mar 2012	Present QEP Details to SSA	PowerPoint presentation	QEP Director, QLT Co-Chair, SSA	---

Year 0 Begins				
Aug 2012	Introduce critical thinking terms and concepts to new students at New Student Orientation (NSO)	PowerPoint presentation	QLT and New Students	---
Aug 2012	Introduce critical thinking terms and concepts to international students at International Student Orientation (ISO)	PowerPoint presentation	QLT and International Students	---
Aug 2012	Introduce QEP & Critical Thinking Skills terminology to new faculty at New Faculty Orientation (NFO)	PowerPoint presentation	QLT and New Faculty	---
Sep 2012	Develop ACT course approval process (including syllabus, learning outcomes, and assessment criteria) and present to Faculty Senate	Time	QLT, Faculty Senate Rep	---
Dec 1, 2012	Select initial faculty to participate in ACT courses	Time	QLT	---
Jan 2013	Introduce critical thinking terms and concepts to new students at New Student Orientation (NSO)	PowerPoint presentation	QLT and New Students	---
Jan 2013	Introduce critical thinking terms and concepts to international students at International Student Orientation (ISO)	PowerPoint presentation	QLT and International Students	---
Jan 2013	Introduce QEP & Critical Thinking Skills terminology to new faculty at New Faculty Orientation (NFO)	PowerPoint presentation	QLT and New Faculty	---
Jan 15, 2013	Professional development materials are due	Time	QLT	\$2,500
Jan 15, 2013	Resource materials for the ACT website are due	Vocabulary list and Foundation for Critical Thinking material	QLT	\$2,500
Mar 1, 2013	Make ACT skills resources available via the ACT website to all faculty to use in the creation of ACT courses	ACT skills resources	QEP Director and Web Designer	\$2,500
Mar 1, 2013	Make ACT materials available to students through the Writing Center, Student Success Center, and Neumann Library	ACT Materials	QLT and Students	\$500
Apr each year	Invited keynote speakers/students in ACT courses present at Student Research Conference	Time	QLT, Faculty, and Students	---

**Table 4: ACT Course Implementation Activities Timeline (Years 1-4)**

Timeline	Activity	Resources	Participants	Cost
Oct 2012	Professional development sessions presented by the Foundation for Critical Thinking	Time	FCT Presenters and Faculty	\$7,500
Nov 2012	Faculty attend orientation on ACT course expectations	Syllabus criteria and Syllabi examples	QLT and Faculty	---
Jan 15, 2013	QLT sends request for proposed ACT courses along with syllabus criteria	Syllabus criteria	QEP Director	---
Feb 1, 2013	Faculty members interested in teaching a new ACT course notify QEP Director	Time	QEP Director and Faculty	---
Mar 2013	Faculty of proposes ACT courses must attend focused workshop on ACT course development	Time	QLT and Faculty	\$2,000
Mar-Apr	Faculty prepare course materials	Time	QLT and Faculty	---
May 1, 2013	Faculty teaching ACT courses submit syllabi, learning outcomes, and assessment processes for approval by QLT	Time	QLT and Faculty	---
May 15, 2013	QLT approves ACT course syllabi, learning outcomes, and assessment processes	Time	QLT and Faculty	---
Aug-Dec	Faculty teach ACT courses in the fall semester	Time	Faculty and Students	---
Jan-May	Faculty teach ACT courses in the spring semester	Time	Faculty and Students	---

This timeline applies to each of the first five years, but will alternate according to which school is implementing courses that year. The phase-in of schools will be as follows:

- Year 0: Pre-Implementation
- Year 1: BUS and SCE
- Year 2: SoE and HSH
- Year 3: BUS and SCE
- Year 4: SoE and HSH



Table 5: Assessment Activities Timeline (Years 0-4)

Timeline	Activity	Resources	Participants	Cost
Oct–Nov	Administer Cornell Critical Thinking Skills (CCTST-Z) Test to incoming juniors	Cornell Critical Thinking Skills Test (CCTST-Z)	OPA, Faculty, and Students	\$5,000
Oct–Nov	Use Communication and Product Rubrics to assess student artifacts of incoming juniors	Communication and Product Rubrics	OPA, Faculty, and Students	\$3,000
Fall	Administer Graduate Student Survey (GSS)	Graduate Student Survey (GSS)	Office of Institutional Research (OIR) and Students	\$500
Mar–Apr	Administer Cornell Critical Thinking Skills (CCTST-Z) Test to graduating seniors	Cornell Critical Thinking Skills Test (CCTST-Z)	OPA, Faculty, and Students	\$5,000
Mar–Apr	Use Communication and Product Rubrics to assess student artifacts of graduating Seniors	Communication and Product Rubrics	OPA, Faculty, and Students	\$3,000
Spring	Administer National Survey of Student Engagement (NSSE)	National Survey of Student Engagement (NSSE)	QEP Director and Students	\$6,000
Spring	Administer Graduate Student Survey (GSS)	Graduate Student Survey (GSS)	OIR and Students	\$500
Spring	Administer Alumni Survey (AS)	Alumni Survey (AS)	Alumni Office and Students	\$1,000

The Faculty Co-Chair will receive a stipend for each long semester and summer and each Lead Faculty and the Faculty Senate Representative on the QLT will receive a stipend for each long semester. In addition, faculty members will meet periodically to score student artifacts using the two rubrics described below. During these scoring sessions, approximately 8-10 faculty members will meet four times a year for a full day of scoring; each faculty member will receive a stipend per diem. Student mentors will receive a stipend for helping in the Student Success Center and the Writing Center.

Assessment, Education & Training

As mentioned in the Assessment Timeline above (Table 4), UHCL will administer the Cornell Critical Thinking Skills Test (CCTST-Z), the National Survey of Student Engagement (NSSE), the Graduate Student Survey (GSS), and the Alumni Survey (AS). In addition, course embedded assignments will be graded with the two rubrics mentioned below. The expenses for these test materials are detailed in Table 4 and summarized in Table 6. To conduct the evaluations mentioned in Section 8, appropriate statistical analytic software will be purchased and maintained, based upon the skills and abilities of the Assessment Data Analyst noted above.

Educational materials from the Foundation for Critical Thinking will be purchased for professional development and distributed to appropriate audiences. Faculty and staff will be afforded ample opportunities to attend professional development workshops and conventions, both on- and off-campus, that center on strategies for teaching and assessing ACT skills. In addition, funds have been dedicated to student development (e.g., research presentation and conferences) and to bring in consultants and guest speakers.

Communication/Promotion

Funds have been dedicated to ensure the communication and promotion of the QEP. Banners with the QEP topic/slogan/logo will be displayed throughout the campus and QEP information will be displayed on hall TV monitors and on the screensavers of all campus public computers. The QEP topic/slogan/logo will be displayed on the wallpaper of all public computers on the campus. Pens, pencils, and other promotional items will be passed out at various campus events to promote the QEP topic of Applied Critical Thinking skills.

General & Administrative

Funds have been dedicated to ensure that the Office of Planning and Assessment has appropriate office supplies and equipment.

Table 6: Budget

	Year 0: 2012-13	Year 1: 2013-14	Year 2: 2014-15	Year 3: 2015-16	Year 4: 2016-17	Total
Personnel						
QEP Director	\$69,000	\$69,000	\$71,070	\$73,202	\$75,398	\$357,670
Assessment Data Analyst	\$45,000	\$45,000	\$46,350	\$47,741	\$49,173	\$233,264
Senior Secretary	\$25,808	\$25,808	\$26,582	\$27,380	\$28,201	\$133,779
Student Worker	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$40,000
Faculty Co-Chair QLT	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$75,000
Stipends for Lead Faculty/Faculty Senate Rep	\$15,000	\$24,000	\$24,000	\$24,000	\$24,000	\$111,000
Stipends for Faculty Scoring	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$40,000
Student Peer Mentors/Tutors	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$175,000
Subtotal:	\$220,808	\$229,808	\$234,002	\$238,323	\$242,772	\$1,165,713
Assessment, Education, & Training						
Assessment Materials	\$24,000	\$24,000	\$24,000	\$24,000	\$24,000	\$120,000
Software	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$75,000
Educational Materials	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$175,000
Professional Development (Faculty/Staff)	\$22,000	\$22,000	\$22,000	\$22,000	\$22,000	\$110,000
Travel (Faculty/Staff)	\$40,500	\$40,500	\$40,500	\$40,500	\$40,500	\$202,500
Student Development (Research Presentations/Conferences)	\$27,000	\$27,000	\$27,000	\$27,000	\$27,000	\$135,000
Consultants/Guest Speakers	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$100,000
Subtotal:	\$183,500	\$183,500	\$183,500	\$183,500	\$183,500	\$917,500
Communication/Promotion						
Publication Materials	\$4,000	\$1,500	\$1,500	\$1,500	\$1,500	\$10,000
Forums/Outreach Programs	\$4,000	\$1,500	\$1,500	\$1,500	\$1,500	\$10,000
Subtotal:	\$8,000	\$3,000	\$3,000	\$3,000	\$3,000	\$20,000
General & Administrative						
Equipment Purchase & Maintenance	\$9,998	\$5,998	\$1,804	\$1,804	\$1,804	\$21,408
Phones, Copying, Office Supplies	\$20,500	\$20,500	\$20,500	\$16,179	\$11,730	\$89,409
Subtotal:	\$30,498	\$26,498	\$22,304	\$17,983	\$13,534	\$110,817
Totals	\$442,806	\$442,806	\$442,806	\$442,806	\$442,806	\$2,214,030

Section 6: Available University/Community Support

- Centers
- Student Research Conference

The University of Houston-Clear Lake (UHCL) campus community includes several constituent groups that offer university and community support. These groups will provide resources as needed. Below are listed a few examples.

Centers

UHCL supports its faculty and students with professional and academic centers to improve both teaching and learning. Four of these, in particular, will provide services in support of the Quality Enhancement Plan of Applied Critical Thinking for Lifelong Learning.

Teaching-Learning Enhancement Center (TLEC)

UHCL's [Teaching-Learning Enhancement Center](#) has a rich history of providing support for faculty and staff development. It strives to provide “information on new ideas and methods in teaching and learning, creates mechanisms for supporting faculty who wish to develop classroom innovations, and stimulates exchanges among faculty so that teaching excellence and ways to achieve it become a common topic of conversation in our academic community.” The university will collaborate with the center to offer critical thinking workshops.

Neumann Library (NL)

The mission of the [Neumann Library](#) is “to provide the people, services, information resources, and environment needed to promote teaching, learning, and the pursuit of knowledge.” It provides information resources needed for critical thinking and learning to the university community through its collections, document delivery services, and instructional services. The library's instructional services include online research guides and customized course guides, which can be used in face-to-face or online instruction. The library also provides physical spaces in which students can work individually or collaboratively.

Furthermore, to support the QEP, the Neumann Library has developed an online [Critical Thinking Resources](#) page that provides multidisciplinary and discipline-specific references, books and e-books, external and institutional assessment resources, and QEP supporting resources. The website is also a repository of QEP documents and committee documents.

Student Success Center (SSC)

The [Student Success Center](#) will provide tutors trained to assist students with critical thinking skills as they apply to their specific disciplines. These tutors will receive a stipend for their service. The SSC already offers supplemental instruction for specific courses, and these tutors will be prepared to offer assistance in projects and activities designed to foster critical thinking skills.

In addition to providing tutors, the SSC will also develop and offer to students handouts on the relationship between critical thinking skills and learning, as well as make available to students the following handbooks on the importance of critical thinking skills: *The Aspiring Thinker's Guide to Critical Thinking* and *The Thinker's Guide to The Art of Asking Essential Questions*, both from the Foundation for Critical Thinking.

University Writing Center (WC)

The [Writing Center](#) provides trained tutors to work with students on their writing projects in one-on-one and small group sessions. These tutors will receive a stipend for their service. The Center also offers Writing Advisors to professors in the disciplines who wish to create writing intensive courses. All tutors will be trained in Applied Critical Thinking and prepared to serve as assistants to faculty involved in the ACT courses and who choose to add a writing emphasis as one of their tools for promoting critical thinking skills.

In addition to providing trained tutors, the Writing Center will develop and offer students handouts on the relationship between critical thinking skills and writing, as well as purchase and make available to students the following handbooks on the importance of critical thinking skills: *The Aspiring Thinker's Guide to Critical Thinking* and *The Thinker's Guide to The Art of Asking Essential Questions*, both from The Foundation for Critical Thinking.

Student Research Conference

UHCL organizes and hosts a [Student Research Conference](#) each spring that enables students to present their research and creative activities to their peers and professors. The university will collaborate with the conference chairs to offer special keynote speakers who will be invited to speak on critical thinking topics. Students enrolled in ACT courses will be asked to present at the conference as a part of their course requirements, and UHCL will sponsor a travel fund for student speakers so they may travel to regional and national conferences to present their work.

Section 7: Assessment of Learning Outcomes

- Embedded Assessments
- Institutional Assessment

Critical thinking assessment experts Robert Ennis (1993), Peter Facione (1990), and Barry Stein and Ada Haynes (2009) agree that when critical thinking skills are assessed, there is a need to be mindful of the purpose of this assessment. What is hoped to be discovered from the assessment will determine which tools are most appropriate.

Ennis (1993) provides a comprehensive list of the purposes of critical thinking skills assessment:

- To diagnose students' abilities
- To give students feedback on their progress
- To motivate students to improve
- To inform teachers about the effectiveness of their teaching strategies
- To conduct research on the teaching of critical thinking skills
- To provide information for student placement
- To provide data that can be used to hold schools accountable for their performance (pp. 180-181)

In its assessment, UHCL will measure the attainment of ACT skills at the course, program, and school level. To determine effectiveness, the university will use both authentic assessments embedded in the coursework as well as standardized performance assessments at the university level to properly evaluate the effect on student learning outcomes with respect to Applied Critical Thinking at all levels.

Embedded Assessments

With the assistance of the faculty of ACT courses, student artifact scores will be collected from incoming juniors in the fall of each year and graduating seniors in the spring of each year and scored with one of two rubrics. These data will be collected and analyzed at the course, program, school, and university levels. Rubrics will be used to perform multi-level assessments of authentic student work. This approach is guided by two strategies: (1) to create a learning opportunity for the faculty who are involved in the QEP ACT courses, and (2) to incorporate flexibility into the available assessment measures so that faculty in each discipline can use whichever method is most appropriate to the types of intellectual tasks required in that discipline.

To assess students' proficiency in critical thinking and to measure the effectiveness of faculty teaching at the course, program, school level, UHCL will use the following rubrics to measure student artifacts:

- Product Rubric (see Appendix F)
- Communication Rubric (see Appendix G)

These rubrics give faculty members the flexibility to assess student artifacts as a part of their assigned coursework. The Product Rubric will be used with course assignments, such as portfolios, class projects, PowerPoint presentations, cases, and posters. The Communication Rubric will also be used with assignments such as project papers, speeches, and PowerPoint presentations. Faculty teaching ACT courses will choose the type of assessment that works best for their teaching styles and disciplines while working with the QLT to determine which instruments will best serve their needs as they redesign their curricula prior to implementing the revised courses. Some courses do not have assignments that align to all of the skills described in the product rubric. In these cases, faculty will have the flexibility to use multiple assignments that align to individual skills of the rubric.

Sampling of student artifact scores will be scheduled by the Office of Planning and Assessment. The sampling design will include collecting data from incoming juniors each fall and graduating seniors each spring. The sampling will include students identified as being in an ACT course and students identified as not being in an ACT course at the beginning and end of their coursework at UHCL, so that studies can be conducted on effectiveness using a pre-test/post-test design, treatment/control design, and longitudinal design.

Student artifacts will be scored by faculty as a normal process of grading class assignments, so that faculty can use the data they collect immediately as they design/redesign their curricula and instructional strategies. Once scored, faculty will submit the artifacts (if possible) and scores to the Office of Planning and Assessment. In some cases, a scoring team of 8 to 10 faculty members will be used to apply the rubrics to student artifacts.

Institutional Assessment

The Cornell Critical Thinking Skills Test Level Z (CCTST-Z) (see Appendix H) will be used as a standardized measure of ACT skills across the university. This test was developed by Robert Ennis in collaboration with his colleagues at Cornell University and the University of Illinois in the 1960s. The test is a multiple choice exam with 52 questions that takes approximately 50 minutes to complete and can be administered via a computerized system. Once all schools begin offering ACT courses, approximately 400 incoming undergraduate students and approximately 400 graduating undergraduate students will be assessed each year.

UHCL will purchase a license to the test contents, and University Computing and Telecommunications (UCT) will create a computerized deployment method for administering these assessments (e.g., Blackboard). All faculty teaching ACT undergraduate courses will be required to assign students to take this assessment (e.g., extra credit). Faculty teaching non-ACT courses will be asked to participate in using this assessment on a voluntary basis. If they choose to participate they will also assign students to take this assessment (e.g., extra credit). This will provide data on students who are not in an ACT course (or who have varying numbers of ACT courses) as well as students in ACT courses. Students' results will be reported to the faculty members prior to the end of the semester so they can use the grades accordingly. The data will also be collected by the Office of Planning and Assessment to be used for various studies of UHCL students' progress in critical thinking skills (see Section 8).

The CCTST-Z will be administered using a computerized deployment method to a stratified sample of incoming undergraduate students each fall to collect pre-test scores and to a stratified sample of graduating students each spring to collect post-test scores from all four schools. The Executive Director of the Office of Planning and Assessment will take primary responsibility for managing the administration of the CCTST-Z. Scores will be collected and analyzed by this office, reported to the university community each year, and used in preparing periodic QEP reports. Faculty will participate by assigning the exam as part of their coursework for selected undergraduate courses.

Selected questions from the National Survey of Student Engagement (see Appendix I), the Graduate Student Survey (see Appendix J), and the Alumni Survey (see Appendix K) will be used to monitor student perceptions of their classroom learning experiences, with particular focus on opportunities to engage in Applied Critical Thinking. These surveys will be administered using a computerized deployment method.

Scores from both the embedded assessments and the institutional assessments will be used to measure student learning outcomes and to assess the progress of UHCL as an institution, ensuring that students graduate with the ACT skills (see Table 7).

Table 7: Learning Outcomes and Assessments

Learning* Outcomes	Procedures	Assessment Method	Performance Criteria of Completers**	Appendix
1. Students will use <i>curiosity</i> to identify a particular problem or area of interest within a discipline.	Students will complete an assignment with embedded assessment.	<i>Product evaluation (E)</i> : Have faculty grade assignment using the UHCL adopted product rubric.	80% of students will achieve at least a satisfactory rating on the product rubric.	F
	Students will complete the Cornell Critical Thinking Skills Test – Level Z (CCTST-Z).	<i>Cornell Critical Thinking Skills Test-Level Z (I)</i> : Score and aggregate CCTST-Z using computerized scoring process.	80% of students will achieve at least a satisfactory rating on the CCTST-Z.	H
2. Students will make <i>connections</i> to their particular issues or problems based upon evidence acquired by research methodologies and citation methods within the discipline.	Students will complete the National Survey of Student Engagement (NSSE).	<i>National Survey of Student Engagement (I)</i> : Have NSSE scored and aggregated by vendor.	80% of students will indicate at least a satisfactory rating on appropriate NSSE items.	I
	Students will complete the Graduate Student Survey (GSS).	<i>Graduate Student Survey (I)</i> : Have GSS scored and aggregated by the Office of Institutional Research.	80% of students will indicate at least a satisfactory rating on appropriate GSS items.	J
3. Students will demonstrate <i>creativity</i> through a divergent mental approach exploring original alternative views/solutions.	Alumni will complete the Alumni Survey (AS).	<i>Alumni Survey (I)</i> : Have AS scored and aggregated by the Office of Institutional Research	80% of students will indicate at least a satisfactory rating on appropriate AS items.	K
	Students will complete an embedded class written assignment.	<i>Written assignment evaluation (E)</i> : Have faculty grade assignment using the UHCL adopted rubric for effective written communication skills.	80% of students will achieve at least a satisfactory score on the written assignment.	G
4. Students will <i>communicate</i> outcomes through writing and/or presentations.	Students will complete an embedded class oral assignment.	<i>Oral assignment evaluation (E)</i> : Have faculty grade assignment using the UHCL adopted rubric for effective oral communication skills.	80% of students will achieve at least a satisfactory score on the oral assignment.	G
	Students will complete an embedded class visual assignment.	<i>Visual assignment evaluation (E)</i> : Have faculty grade assignment using the UHCL adopted rubric for effective visual communication skills.	80% of students will achieve at least a satisfactory rating on the visual assignment.	G

E-Embedded Assessment; I-Institutional Assessment

* The selected items identified in Appendices F, G, H, I, J, K will be used to measure the four learning outcomes.

** Satisfactory is defined as an average of 3 or higher on a 4-point Likert scale or the 60th percentile on the CCTST-Z.

Section 8: Analysis and Evaluation of Plan Results

- Analysis of Learning Outcomes
- Formative Evaluation of Workshops and Other Activities

Analysis of Learning Outcomes

As discussed previously, Table 7 shows the performance criteria of the student learning outcomes and assessments. In addition, improvement of Applied Critical Thinking (ACT) skills will be measured to analyze the effect of the QEP on UHCL students. Sampling of data from both embedded and institutional assessments will be administered by the Office of Planning and Assessment. A stratified sampling design will include collecting Cornell Critical Thinking Skills Test Level Z (CCTST-Z data from incoming juniors each fall and graduating seniors each spring in order to establish the appropriate representation from each of the four schools. Once all schools are offering ACT courses, approximately 100 students will be included in each group (e.g., School of Education incoming juniors). Until that time, 200 students will be included in each group in order to ensure an appropriate sample size in the initial stages of the plan. Data from the embedded assignments (graded with one or both of the two rubrics) will include data from all students in selected ACT courses while data from the National Survey of Student Engagement (NSSE), the Graduate Student Survey (GSS), and the Alumni Survey (AS) will be on a volunteer basis as these surveys are not mandatory. All data collected from these surveys will be used in the analyses. In addition, the number of ACT courses a student completes will be tracked so that studies can be conducted on effectiveness using a pre-test/post-test design, treatment/control design, and longitudinal design.

A pre-test/post-test design will be used to analyze improvement of students on assessments listed in Section 7 (i.e., the CCTST-Z). The improvement in each student's scale score on the assessment will be analyzed using a matched-pairs *t*-test. Statistical significance would imply that the QEP is making a difference in the teaching and learning of applied critical thinking skills at the university level.

Using a one-way ANOVA, the data will be analyzed to determine differences between schools that are statistically significant. No differences between schools would imply that all schools are performing basically the same with implementing the QEP and establishing formalized common vocabulary, common language, and common assessments.

Using regression, the data will be analyzed to determine if there is a statistically significant relationship between the improvement of a student's scale score and the number of ACT courses a student takes. The number of ACT courses a student completes will be the independent variable and the improvement of the student's scale score will be the dependent variable. The student's school will be entered as a covariate. A statistically significant relationship would imply that a student's ACT skills are related to the number of ACT courses the student completes.

A longitudinal design will also be used to determine improvement of the university as an institution with teaching ACT skills over time. Each year the data from seniors will be analyzed for trend using regression. The year of implementation will be the independent variable and the improvement of the student's score will be the dependent variable. The student's school will be entered as a covariate. Statistical significance will imply the university is improving as an institution with teaching ACT skills over time.

Formative Evaluation of Workshops and Other Activities

In addition, formative data will be collected to determine whether implementation activities occurred as planned and whether these activities achieved the desired outcomes. Materials developed by faculty (e.g., syllabi, curriculum, assessments) will be reviewed and feedback provided. Data will be collected on the quality and success of professional development to identify issues and/or trends that need to be modified for future staff development. Data will also be collected with respect to conferences, professional development, and workshops that faculty attend off-campus to determine relevance and quality. In addition to evaluating the workshops as soon as they are completed (questionnaires for faculty and trainers); staff from the Office of Planning and Assessment will examine the work products (e.g., syllabi, examinations) of faculty who have participated in the workshops to look for direct evidence of implementation. As a result of the formative evaluation process, sessions determined not relevant or of low quality will be modified to improve their effectiveness. These data will be analyzed primarily using descriptive statistics and used primarily for formative purposes or as evidence as to why the student learning outcomes are (or are not) meeting the pre-established standards.

As noted, the Office of Planning and Assessment will facilitate the evaluation processes and write the appropriate reports. Faculty, administrators, and other stakeholders will be presented formative findings annually so that appropriate modifications can be made. Summative findings will be presented to SACS in the five-year report.

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Appendix A: Request for Quality Enhancement Plan (QEP) Topic Proposals

The Southern Association of Colleges and Schools Commission on Colleges University of Houston-Clear Lake March 8, 2010

1. **Purpose**

The purpose of this request is to obtain proposals that identify and provide basic justification for the selection of a topic for the University of Houston-Clear Lake (UHCL) Quality Enhancement Plan (QEP). Proposals received will guide the UHCL QEP Committee in the final recommendations and selection of the institution's QEP. After the QEP topic is selected, the QEP Committee will develop the QEP plan that will be submitted to SACS six weeks before the arrival of the review team on the UHCL campus, which is currently scheduled for the spring of 2012.

2. **Background**

A Quality Enhancement Plan (QEP) is now required by Core Requirement 2.12 as part of the reaffirmation of accreditation by the Commission on Colleges of the Southern Association of Colleges and Schools (SACS), the regional accrediting body for UHCL. The QEP is a plan that is a “carefully designed and focused course of action that addresses a well-defined issue or issues directly related to *improving student learning*.” According to SACS, the QEP:¹

- includes a broad-based institutional process identifying key issues emerging from institutional assessment,
- focuses on learning outcomes and/or the environment supporting student learning and accomplishing the mission of the institution,
- demonstrates institutional capability for the initiation, implementation, and completion of the QEP,
- includes broad-based involvement of institutional constituencies in the development and proposed implementation of the QEP, and
- identifies goals and a plan to assess their achievement.

3. **Evaluation Criteria**

Each proposal will be evaluated by the QEP Development Team. In addition to the requirements specified in the Proposal Requirements, the evaluation will be guided by the following questions:

- The topic is very important for UHCL
- Student learning outcomes are clearly identified
- Potential actions that might be taken to improve student learning are discussed
- The topic is focused yet has broad interest and relevance across students, faculty, staff, and administrators
- The topic will affect a well-defined student population
- The level and extent of departmental and unit involvement is discussed

¹ <http://www.sacscoc.org/pdf/081705/QEP%20Handbook.pdf>

4. **Proposal Requirements**

The proposal should include a general description of the proposed topic and a narrative justification using the following format:

- I. **Executive Summary** – Brief description of the project
- II. **Identification and Rationale for Topic Selection** – Relevance of the topic in relation to improvement of student learning at UHCL. The rationale must present research and assessment based evidence to support the QEP topic
- III. **Desired Student Learning Outcomes** – Specific, well-defined goals expected to lead to observable results
- IV. **Literature Review and Best Practices** – Evidence of consideration of best practices related to the topic
- V. **Actions to be Implemented** – Evidence of careful analysis of institutional context in designing actions capable of generating the desired student learning outcomes
- VI. **Timeline** – A logical calendaring of all actions to be implemented for the first three years
- VII. **Organizational Structure** – Proposed lines of responsibility for implementation and sustainability
- VIII. **Resources** – A realistic allocation of sufficient human, financial, and physical resources
- IX. **Assessment** – Overview of evaluation techniques
- X. **Appendices** (optional)

5. **Submittal Procedures**

The proposal must be prepared as an MS Word document with one-inch margins and 12-point Times New Roman typeface. The proposal may not exceed fifteen single-spaced pages of text, including figures and references. An individual or team may submit any number of proposals. However, in order to be considered, proposals must be submitted in electronic form to JoAnne Laborde (laborde@uhcl.edu) in the Office of the Provost by March 29, 2010.

6. **Proposal Recognition Award**

The author of the proposal that receives the highest rating based on the requirements stated above will be awarded \$1,000. The authors of proposals receiving the second and third highest rating will receive \$500 and \$250 respectively.

7. **Schedule**

Beg Late February 2010	Open meetings on campus led by a QEP reviewer to discuss the scope and purpose of the QEP
April 22, 2010	Proposals due
April 22 to May 2, 2010	Proposals reviewed by the QEP Development Team
May 17, 2010	Recommendations made to VP A&F, Provost, and President
By June 1, 2010	QEP topic finalized

Appendix B: Dissemination of Information Regarding QEP Topic Selection at UHCL

Meetings by Dates			
Date	Organization	Presentation Title/Topic	Presenter
09/18/09	UHCL Community (Convocation)	What is QEP?	Dr. Mrinal Mughd
10/15/09	Professional and Administrative Staff Association (PASA)	SACS and QEP	Dr. Carl Stockton & Dr. Simone Tiu
02/22/10	UHCL Community	Expectations of a QEP	Dr. Gerry Dizinno
03/08/10	QEP Topic Selection Committee	QEP Topic Meeting	Committee Members
03/10/10	School of Human Sciences & Humanities	QEP: Process & Resources	Deborah Griffin
03/12/10	QEP Topic Selection Committee	QEP Topic Meeting	Committee Members
04/12/10	University Community	QEP Topic Request	E-mail/JoAnne Laborde
04/15/10	SSA/PASA	QEP Topics Request	Dr. Larry Kajs
04/20/10	Student Government Association (SGA)	QEP Topics Request	Dr. Larry Kajs
04/22/10	University Community	QEP Topics	Faculty Senate Newsletter
05/07/10	University Community	QEP Topic Request	E-mail/JoAnne Laborde
05/26/10	University Community	QEP Topic Request	E-mail/JoAnne Laborde
06/03/10	QEP Topic Selection Committee	QEP Topic Meeting	Committee Members
06/09/10	QEP Topic Selection Committee	QEP Topic Meeting	Committee Members
06/16/10	QEP Topic Selection Committee	QEP Topic Meeting	Committee Members
06/30/10	QEP Topic Selection Committee	QEP Topic Meeting	Committee Members
07/07/10	QEP Topic Selection Committee	QEP Topic Meeting	Committee Members
09/01/10	QEP Topic Selection Committee	QEP Draft Proposal	E-mail/Dr. Larry Kajs



Appendix C: MAPP Multiple Year Data—All Cohorts: Fall 2006, Fall 2007, Spring 2007, Spring 2009, Spring 2010

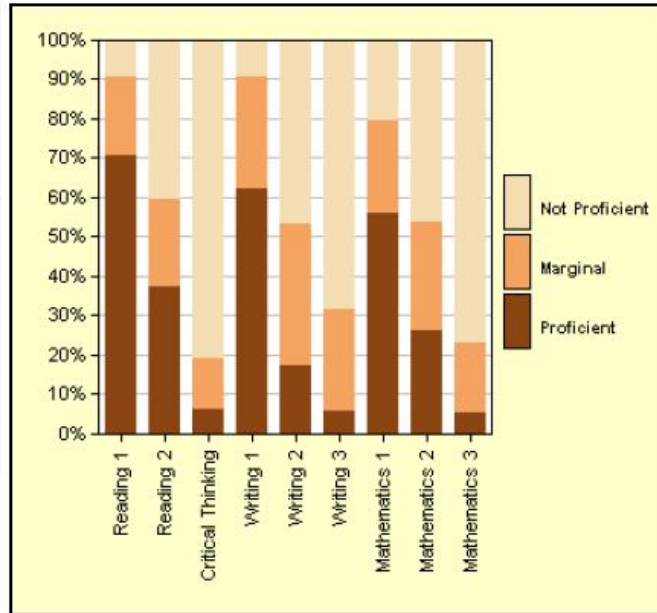
MAPP Measures of Academic Proficiency and Progress

Summary of Proficiency Classifications To show how many students are proficient at each level

University of Houston-Clear Lake
Abbreviated Form
Test Description: Combined
Number of students tested: 586
Number of students included in these statistics: 545
Number of students excluded (see roster): 41

Cohort Name: Combined
Close Date: Combined
Student Level: All

Skill Dimension	Proficiency Classification		
	Proficient	Marginal	Not Proficient
Reading, Level 1	71%	20%	9%
Reading, Level 2	37%	22%	40%
Critical Thinking	6%	13%	81%
Writing, Level 1	62%	28%	10%
Writing, Level 2	17%	36%	47%
Writing, Level 3	6%	26%	68%
Mathematics, Level 1	56%	24%	20%
Mathematics, Level 2	26%	27%	46%
Mathematics, Level 3	5%	18%	77%





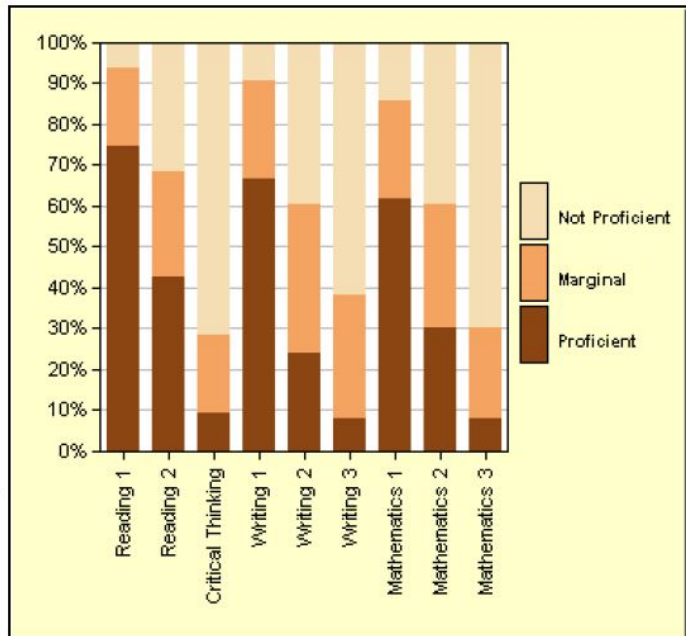
Appendix D: MAPP Spring 2010 Data

Summary of Proficiency Classifications To show how many students are proficient at each level

University of Houston-Clear Lake
 Abbreviated Form
 Test Description: Abbreviated Form A Paper
 Number of students tested: 72
 Number of students included in these statistics: 63
 Number of students excluded (see roster): 9

Cohort Name: TEST DATE: 2010-03-10T00:00:00-05:00
 Close Date: 03/15/2010
 Student Level: All

Skill Dimension	Proficiency Classification		
	Proficient	Marginal	Not Proficient
Reading, Level 1	75%	19%	6%
Reading, Level 2	43%	25%	32%
Critical Thinking	10%	19%	71%
Writing, Level 1	67%	24%	10%
Writing, Level 2	24%	37%	40%
Writing, Level 3	8%	30%	62%
Mathematics, Level 1	62%	24%	14%
Mathematics, Level 2	30%	30%	40%
Mathematics, Level 3	8%	22%	70%



Appendix E: Critical Thinking Skills and Sub-Skills

Critical Thinking Skills Inventory²

Interpretation

Categorization

1. Formulate categories, distinctions, or frameworks to organize information in such a manner as to aid comprehension.
2. Translate information from one medium to another to aid comprehension without altering the intended meaning.
3. Make comparisons; note similarities and differences between or among informational items.
4. Classify and group data, findings, and opinions on the basis of attributes or a given criterion.

Detecting Indirect Persuasion

1. Detect the use of strong emotional language or imagery that is intended to trigger a response in an audience.
2. Detect the use of leading questions that are biased towards eliciting a preferred response.
3. Detect “if, then” statements based on the false assumption that if the antecedent is true, so must be the consequence.
4. Recognize the use of misleading language.
5. Detect instances where irrelevant topics or considerations are brought into an argument that diverts attention from the original issues.
6. Recognize the use of slanted definitions or comparisons that express a bias for or against a position.

Clarifying Meaning

1. Recognize confusing, vague, or ambiguous language that requires clarification to increase comprehension.
2. Ask relevant and penetrating questions to clarify facts, concepts, and relationships.
3. Identify and seek additional resources, such as resources in print, which can help clarify communication.
4. Develop analogies and other forms of comparisons to clarify meaning.
5. Recognize contradictions and inconsistencies in written and verbal language, data, images, or symbols.
6. Provide an example that helps to explain something or removes a troublesome ambiguity.

² Critical Thinking Skills Inventory adapted from: U.S. Department of Education, National Center for Education Statistics. *The NPEC Sourcebook on Assessment, Volume 1: Definitions and Assessment Methods for Critical Thinking, Problem Solving, and Writing*, NCES 2000--172, prepared by T. Dary Erwin for the Council of the National Postsecondary Education Cooperative Student Outcomes Pilot Working Group: Cognitive and Intellectual Development. Washington, DC: U.S. Government Printing Office, 2000.

Analysis

Examining Ideas and Purpose

1. Recognize the relationship between the purpose of a communication and the problems or issues that must be resolved in achieving that purpose.
2. Assess the constraints of the practical applications of an idea.
3. Identify the ideas presented and assess the interests, attitudes, or views contained in those ideas.
4. Identify the stated, implied, or undeclared purpose(s) of a communication.

Detecting and Analyzing Arguments

1. Examine a communication and determine whether or not it expresses a reason(s) in support or in opposition to some conclusion, opinion, or point of view.
2. Identify the main conclusions of an argument.
3. Determine if the conclusion is supported with reasons, and identify those that are stated or implied.
4. Identify the background information provided to explain reasons that support a conclusion.
5. Identify the unstated assumptions of an argument.

Evaluation

1. Assess the importance of an argument and determine if it merits attention.
2. Evaluate an argument in terms of its reasonability and practicality.
3. Evaluate the credibility, accuracy, and reliability of sources of information.
4. Determine if an argument rests on false, biased, or doubtful assumptions.
5. Assess statistical information used as evidence to support an argument.
6. Assess how well an argument anticipates possible objectives and offers, when appropriate, alternative positions.
7. Determine how new data might lead to the further confirmation or questioning of a conclusion.
8. Determine and evaluate the strength of an analogy used to warrant a claim or consolation.
9. Determine if conclusions based on empirical observations were derived from a sufficiently large and representative sample.
10. Determine if an argument makes sense.
11. Assess bias, narrowness, and contradictions when they occur in the person's point of view.
12. Assess the degree to which the language, terminology, and concepts employed in an argument are used in a clear and consistent manner.
13. Determine what stated or unstated values or standards of conduct are upheld by an argument and assess their appropriateness to the given context.
14. Judge the consistency of supporting reasons, including their relevancy to a conclusion and their adequacy to support a conclusion.
15. Determine and judge the strength of an argument in which an event(s) is claimed to be the results of another event(s) (causal reasoning).

Interference Skills

Collecting and Questioning Evidence

1. Determine the most significant aspect of a problem or issue that needs to be addressed, prior to collecting evidence.
2. Formulate a plan for locating information to aid in determining if a given opinion is more or less reasonable than a competing opinion.
3. Combine disparate pieces of information whose connection is not obvious, but when combined offer insight into a problem or issue.
4. Judge what background information would be useful to have when attempting to develop a persuasive argument in support of one's opinion.
5. Determine if one has sufficient evidence to form a conclusion.

Develop Alternative Hypotheses

1. Seek the opinions of others in identifying and considering alternatives.
2. List alternatives and consider their pros and cons, including their plausibility and practicality, when making decisions or solving problems.
3. Project alternative hypotheses regarding an event, and develop a variety of different plans to achieve some goal.
4. Recognize the need to isolate and control variables in order to make strong causal claims when testing hypotheses.
5. Seek evidence to confirm or disconfirm alternatives.
6. Assess the risks and benefits of each alternative in deciding between them.
7. After evaluating the alternatives generated, develop, when appropriate, a new alternative that combines the best qualities and avoids the disadvantages of previous alternatives.

Drawing Conclusions

1. Assess how the tendency to act in ways to generate results that are consistent with one's expectations could be responsible for experimental results and everyday observations.
2. Reason well with divergent points of view, especially with those with which one disagrees, in formulating an opinion on an issue or problem.
3. Develop and use criteria for making judgments that are reliable, intellectually strong, and relevant to the situation at hand.
4. Apply appropriate statistical inference techniques to confirm or disconfirm a hypothesis in experiments.
5. Use multiple strategies in solving problems, including means-ends analysis, working backward, analogies, brainstorming, and trial and error.
6. Seek various independent sources of evidence, rather than a single source of evidence, to provide support for a conclusion.
7. Note uniformities or regularities in a given set of facts, and construct a generalization that would apply to all these and similar instances.
8. Employ graphs, diagrams, hierarchical trees, matrices, and models as solution aids.

Presenting Argument Skills

1. Present supporting reasons and evidence for their conclusion(s) which address the concerns of the audience.
2. Negotiate fairly and persuasively.

3. Present an argument succinctly in such a way as to convey the crucial point of the issue.
4. Cite relevant evidence and experiences to support a position.
5. Formulate accurately and consider alternative positions and opposing points of view, noting and evaluating evidence and key assumptions on both sides.
6. Illustrate central concepts with significant examples and show how these concepts and examples apply in real situations.

Reflection Skills

1. Apply the skills of analysis and evaluation to arguments to confirm and/or correct their reasoning and results.
2. Critically examine and evaluate vested interests, beliefs, and assumptions in supporting an argument or judgment.
3. Make revisions in arguments and findings when self-examination reveals inadequacies.

Critical Thinking Skills Dispositions

1. Be curious and inquire about how and why things work.
2. Be organized, orderly, and focused in inquiry or in thinking.
3. Willingly persevere and persist at a complex task.
4. Be flexible and creative in seeking solutions.
5. Be inclined to arrive at a reasonable decision in situations where there is more than one plausible solution.
6. Apply insights from cultures other than one's own.
7. Exhibit honesty in facing up to one's own prejudices, biases, or tendency to consider a problem solely from one's own viewpoint.
8. Monitor one's own understanding of a situation and one's own progress toward goals.
9. Find ways to collaborate with others to reach consensus on a problem or issues.
10. Be intellectually careful and precise.
11. Value the application of reason and the use of evidence.
12. Be open-minded; strive to understand and consider divergent points of view.
13. Be fair-minded; seek truth and be impartial, even if the findings of an inquiry may not support one's own preconceived opinions.
14. Willingly self-correct and learn from errors made, no matter who calls them to one's attention.



Appendix F: Product Rubric³

Skill	Sub-Skills	1- Unsatisfactory	2-Below Satisfactory	3- Satisfactory	4- Exemplary
Interpretation (Connections)	Categorization	Fails to formulate categories, distinctions, or frameworks to organize information.	Formulates categories, distinctions, or frameworks to organize information, but does so poorly or inaccurately.	Formulates categories, distinctions, or frameworks to organize information accurately.	Formulates categories, distinctions, or frameworks to organize information in such a manner as to aid comprehension effectively and efficiently.
	Detecting indirect persuasion	Fails to detect the use of strong emotional language or imagery that is intended to trigger a response in an audience.	Detects the use of strong emotional language or imagery that is intended to trigger a response in an audience, but does so poorly or inaccurately.	Detects the use of strong emotional language or imagery that is intended to trigger a response in an audience accurately.	Detects the use of strong emotional language or imagery that is intended to trigger a response in an audience and responds appropriately.
	Clarifying meaning	Fails to recognize confusing, vague, or ambiguous language that requires clarification to increase comprehension.	Recognizes confusing, vague, or ambiguous language that requires clarification to increase comprehension, but does so poorly or inaccurately.	Recognizes confusing, vague, or ambiguous language that requires clarification to increase comprehension.	Recognizes confusing, vague, or ambiguous language that requires clarification to increase comprehension and clarifies effectively.

³ Created from Appendix E.



Analysis (Curiosity)	Examining ideas and purpose	Fails to identify the ideas presented.	Identifies the ideas presented, but does so poorly or inaccurately.	Identifies the ideas presented accurately.	Identifies the ideas presented and assesses the interests, attitudes, or views contained in those ideas effectively.
	Detecting and analyzing arguments	Fails to identify the main conclusions of an argument.	Identifies the main conclusions of an argument, but does so poorly or inaccurately.	Identifies the main conclusions of an argument accurately.	Identifies the main conclusions of an argument accurately and can interpret the meaning of those conclusions.
Evaluation (Connections)	Evaluation	Fails to evaluate the credibility, accuracy, and reliability of sources of information.	Evaluates the credibility, accuracy, and reliability of sources of information, but does so poorly or inaccurately.	Evaluates the credibility, accuracy, and reliability of sources of information accurately.	Evaluates the credibility, accuracy, and reliability of sources of information accurately and effectively.
Inference Skills (Connections)	Collecting and questioning evidence	Fails to determine the most significant aspect of a problem or issue.	Attempts to determine the most significant aspect of a problem or issue, but does so poorly or inaccurately.	Determines the most significant aspect of a problem or issue that needs to be addressed accurately.	Determines the most significant aspect of a problem or issue that needs to be addressed and then collects the appropriate evidence to address it.



	Developing alternative hypotheses	Fails to evaluate the alternatives generated.	Evaluates the alternatives generated, but does so poorly or inaccurately.	Evaluates the alternatives generated, but does not develop a new alternative that combines the best qualities and avoids the disadvantages of previous alternatives.	After evaluating the alternatives generated, effectively develops, when appropriate, a new alternative that combines the best qualities and avoids the disadvantages of previous alternatives.
	Drawing conclusions	Fails to note uniformities or regularities in a given set of facts.	Notes uniformities or regularities in a given set of facts, but does so poorly or inaccurately.	Notes uniformities or regularities in a given set of facts accurately, but does not construct a generalization that would apply to all these and similar instances.	Efficiently and effectively notes uniformities or regularities in a given set of facts, and constructs a generalization that would apply to all these and similar instances.
Presenting Argument Skills (Communication)	Presenting argument skills	Fails to present an argument.	Presents an argument, but does so poorly or ineffectively.	Presents an argument effectively.	Presents an argument succinctly in such a way as to convey the crucial points of the issue.
Reflection Skills (Connections)	Reflection skills	Fails to apply the skills of analysis and evaluation.	Applies the skills of analysis and evaluation, but does so poorly or ineffectively.	Applies the skills of analysis and evaluation effectively.	Effectively applies the skills of analysis and evaluation to arguments to confirm and/or correct their reasoning and results.

Appendix G: Communication Rubric

Skills	Sub-Skills	1- Unsatisfactory	2-Below Satisfactory	3- Satisfactory	4- Exemplary
Higher Order Thinking (Communication)	Focus Analysis/ Interpretation/ Problem solving Evaluation of Alternatives	Fails to convey purpose-driven information or consider alternatives.	Attempts to convey purpose driven information but is hampered by lack of depth. Unable to consider alternatives.	Conveys purpose driven information and acknowledges alternatives.	Conveys purpose-driven and complex information and effectively considers alternatives
Rhetorical Awareness (Communication)	Audience/ Tone Use of evidence Structure	Fails to meet the needs of the audience and/or is characterized by inappropriate tone, lack of evidence, or ineffective structure.	Attempts to meet the needs of the audience but is characterized by inappropriate tone, lack of evidence, or ineffective structure.	Meets the needs of the audience using acceptable tone, evidence, and structure.	Effectively meets the needs of the audience using appropriate tone, well placed evidence, and a clear structure.
Use of Conventions for the Communication Medium (Communication)	Consistency of conventions Best practices	Fails to follow the conventions and best practices of the communication medium (written, oral, visual).	Attempts to follow the conventions and best practices of the communication medium (written, oral, visual) but is hampered by weak skills and/or inconsistencies	Adequately and consistently follows the conventions and best practices of the communication medium (written, oral, visual).	Skillfully and consistently follows the conventions and best practices of the communication medium (written, oral, visual).



Appendix H: Cornell Critical Thinking Skills Test⁴

Aspects of Critical Thinking Incorporated in Level X and Level Z and Rough Assignment of Items Thereto		
Aspects of Critical Thinking	Items of Level X	Items of Level Z
Induction (Connections)	3-25, 48, 50	17, 26-42
Deduction (Connections)	52-65, 67-76	1-10, 39-52
Value Judging	not tested	not tested
Observation (Curiosity)	27-50	22-25
Credibility (Connections)	27-50	22-25
Assumptions (Connections)	67-76	43-52
Meaning (Connections)	not directly tested	11-21, 43-46
Dispositions	not directly tested	not directly tested

⁴ The Critical Thinking Company. The Conceptual Basis



Appendix I: Selected Questions from the National Survey of Student Engagement⁵

Question #	Question (Various Likert Scales)
1a (Curiosity)	Asked questions in class or contributed to class discussions.
1b (Creativity)	Made a class presentation.
1d (Connections)	Worked on a paper or project that required integrating ideas or information from various sources.
1i (Connections)	Put together ideas or concepts from different courses when completing assignments or during class discussions.
1p (Curiosity)	Discussed ideas from your readings or classes with faculty members outside of class.
1t (Curiosity)	Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc).
2b (Curiosity)	Analyzing the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components.
2c (Connections)	Synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships.
2d (Connections)	Making judgments about the value of information, arguments, or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions.
2e (Connections)	Applying theories or concepts to practical problems or in new situations.
6d (Curiosity)	Examined the strengths and weaknesses of your own views on a topic or issue.
6e (Curiosity)	Tried to better understand someone else's views by imagining how an issue looks from his or her perspective.
6f (Connections)	Learned something that changed the way you understand an issue or concept.
7a (Connections)	Practicum, internship, field experience, co-op experience, or clinical assignment.
7d (Creativity)	Work on a research project with a faculty member outside of course or program requirements.
7h (Connections)	Culminating senior experience (Capstone course, senior project or thesis, comprehensive exam, etc.).
9d (Creativity)	Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.).
11f (Curiosity)	Analyzing quantitative problems.
11g (Connections)	Using computing and information technology.
11m (Connections)	Solving complex real-world problems.

⁵ University of Houston-Clear Lake. National Survey of Student Engagement: Mean Comparisons, August 2010.



Appendix J: Selected Questions from Graduate Student Survey⁶

Question #	Question*
29 (Communication)	My program prepared me to write effectively.
30 (Communication)	My program prepared me to speak effectively.
31 (Connections)	My program prepared me to apply and manage information technology effectively.
33 (Connections)	My program helped me to develop an awareness of local and global diversity.
34 (Connections)	My program prepared me to address the ethical commitments of professional life.
41 (Creativity)	Participation in student organizations provided an opportunity for me to learn from my peers.

*Likert Scale (1-Strongly Disagree, 2-Disagree, 3-Agree, 4-Strongly Agree)

⁶ Office of Institutional Research: University of Houston-Clear Lake. Graduating Student Survey – Total UHCL Results – Fall 2011.



Appendix K: Selected Questions from Alumni Survey⁷

Question #	Question *
9 (Communication)	Developed written communication skills.
10 (Communication)	Developed oral communication skills.
11 (Communication)	Developed public speaking and presentation skills.
13 (Creativity)	Developed problem solving skills.
14 (Creativity)	Developed the ability to think creatively.
15 (Curiosity)	Developed the ability to examine problems from multiple perspectives.
16 (Curiosity)	Developed the ability to critically analyze and evaluate new ideas and information.
20 (Curiosity)	Developed the ability to understand many points of view.
24 (Creativity)	Developed the ability to adapt to changing circumstances.
26 (Curiosity)	Developed an appreciation for diversity.
27 (Curiosity)	Developed an understanding of diverse cultures and values.
28 (Connections)	Developed the ability to recognize the ethical dilemmas of professional life.
29 (Creativity)	Developed the ability to act upon the ethical dilemmas in professional life.
30 (Connections)	Developed a tolerance for different points of view.
31 (Curiosity)	Developed an awareness of local and global diversity in my professional field.
33 (Curiosity)	Developed an understanding of issues and problems facing the world.
34 (Connections)	Developed an understanding of the present world and how it relates to historical events and processes.
35 (Connections)	Developed the ability to search for relevant information and ideas from multiple sources.

*Likert Scale (1-Strongly Disagree, 2-Disagree, 3-Agree, 4-Strongly Agree)

⁷ Office of Institutional Research: University of Houston-Clear Lake. Alumni Survey 2009-2010 Total UHCL Responses.