ThinkAchieve: Creating Connections

Promoting Critical Thinking at UTC

Year One Assessment Report

2011-2012

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EXECUTIVE SUMMARY

The University of Tennessee at Chattanooga (UTC) has completed the first year of a five-year quality enhancement plan, *ThinkAchieve: Creating Connections*, aimed at teaching students to think critically within their classrooms and beyond. The goal of *ThinkAchieve* is that over the course of the university experience, UTC students will increase their overall critical thinking skills, as exhibited by the ability to identify, evaluate, and interpret information; solve problems, create innovative solutions through creative thinking; and communicate ideas and information effectively. The strategy is to infuse the development and nurture of critical thinking throughout all aspects of the UTC experience, and is integrated through three student-centered links.

Introduction: Orientation Programming is designed to ingrain and foster critical thinking strategies in new freshmen by introducing to them critical thinking and problem-solving concepts, fostering a community of learning, and creating an expectation of academic rigor to prepare them for university study. This goal is achieved through the completion of a critical thinking group exercise during new student orientation. Nearly 2,300 students came through orientation this summer and have had this initial exposure. They practiced "critical thinking" and now know we expect them to be critical thinkers while they are here at UTC.

The *In the Classroom: Curricular Integration* component integrates the teaching of critical thinking and problem-solving skills throughout the undergraduate curriculum, in both general education and major program courses. Extensive faculty and staff development activities provide support for this program link, allowing departments, faculty, and staff to define, focus, and assess critical thinking within the disciplines to help students improve their skills. A total of 550 employees engaged in over 1,600 hours of development activities in Year One, which included seminars, webinars, workshops, retreats; faculty learning communities; book clubs; CAT training and grading sessions; and faculty and student orientation activities pertaining to critical thinking. The *ThinkAchieve Grants Program* was also developed and implemented to encourage initiation of projects designed to facilitate students' critical thinking. Ten grants totaling $11,657 were awarded in the first year to facilitate projects in the classroom and beyond the classroom.

The *Beyond the Classroom: Experiential Learning* link provides students with opportunities to participate in learning using critical thinking outside the classroom that will help them relate to their university studies. In this component, student participation in experiential learning activities is encouraged, tracked, and rewarded through a program of recognition and awards. Activities include internships, study abroad, class/community project, capstone experiences, leadership roles, and special events. In Year One, criteria and guidelines for the program were developed and the process for documenting participation on a co-curricular transcript was outlined. Also, to encourage incoming students' connection with the learning that can happen in the community, *Chattanooga Connections*, a UTC Welcome Week activity, was planned and implemented in which over 100 students participated in one of nine experiential learning events in Chattanooga.

While the *ThinkAchieve* program was being developed and initiated in the first year, institutional assessments of students' ability to think critically were taken to provide baseline measurements against which growth can be assessed over the next four years. Student learning outcomes were assessed using the Critical Thinking Assessment Test (CAT). Additional measures of critical thinking included the CAT total scale, measurements from the ETS Proficiency Profile Exam

(PPE), and perceptions data from the National Survey of Student Engagement (NSSE), and Faculty Survey of Student Engagement (FSSE).

CAT findings suggest that UTC students do gain some level of critical thinking skills by the time they graduate, especially skills that involve creative thinking when solving problems. However, they appear to have difficulty working with relevant information when problem-solving. Other comparisons to national CAT means indicate that our freshmen students are relatively comparable to the "average" freshmen when it comes to the amount of critical thinking and problem-solving skills they possess. This cannot be said for our seniors, however, who scored significantly lower than the national pool of senior CAT test-takers on the majority of items. Further, examination of senior CAT scores reveals differences in students' critical thinking abilities across colleges.

PPE results revealed that our graduating seniors' proficiency levels in critical thinking are quite low and declining, with only 9.5% of seniors scoring *proficient* in critical thinking in Spring 2011 and 2.5% fewer meeting this criteria in Spring 2012 (7% *proficient*). This decline resulted in a 20 point drop in institutional rankings in one year (from 39th to 19th percentile). Further analysis of PPE scores also revealed differences in students' proficiency levels across colleges.

A comparison of UTC faculty and student responses to the NSSE and FSSE revealed disparate perceptions regarding the amount of emphasis placed on higher level learning in the classroom. Considerably fewer faculty than students reported emphasis on *memorization* in their classes, while fewer students than faculty felt higher level learning skills (*synthesizing*, *analyzing*, *evaluating*, and *applying* information) were emphasized. Further, a comparison of UTC student perceptions to those of students in the national pool of survey-takers revealed that UTC students felt they are expected to *memorize* more, and participate in higher level learning skills less, than the "average" college student.

Baseline data collected from the CAT, PPE, and NSSE/FSSE provide strong support for this critical thinking initiative at UTC. The *ThinkAchieve* program needs to be implemented across the colleges, in both general education and major related courses and programs, to be fully integrated across the entire undergraduate experience. Two major recommendations for Year Two are as follows:

1) *ThinkAchieve* needs another strong kick-off in Year Two. This kick-off should be at the start of the fall semester, supported by senior leadership and highly visible to the campus. The program should be continually highlighted throughout the year. The program website should be updated regularly. More widely and varied distribution of program marketing materials is also needed.

2) Baseline data need to be shared across campus and detailed action plans developed. Data sharing should begin with deans and department heads. Faculty and staff also need to review and respond to the data. Participation in *ThinkAchieve* activities should be valued and recognized by colleagues, department heads/supervisors, and deans.

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I. Introduction

The University of Tennessee at Chattanooga (UTC) has completed the first year of a five-year Quality Enhancement Plan (QEP), *ThinkAchieve: Creating Connections*, aimed at teaching students to think critically within their classrooms and beyond. Critical thinking is a fundamental skill demanded by employers and deemed essential for global and social development and prosperity (AACU, 2004; Hart, 2009). The program is grounded in the conviction that students who are competent in critical thinking will achieve higher levels of success. The ability to think critically will fuel their achievements in academics, their careers, and their lives. The strategy of *ThinkAchieve* is to purposefully infuse the development and nurture of critical thinking throughout all aspects of the UTC experience: orientation, general education, courses in the major, and co-curricular activities. Students are expected to improve their critical thinking skills progressively, as they practice and apply them over their entire university experience.

The goal for the project is that, *over the course of their university experience, UTC students will increase their overall critical thinking skills as exhibited by the ability to identify, evaluate, and interpret information; solve problems and create innovative solutions through creative thinking; and communicate ideas and information effectively*.

To achieve this goal, students will need to attain the following five student learning outcomes:

1. Identify, evaluate, and interpret information, by raising pertinent questions and identifying uncertainties,
2. Solve problems by determining limitations, making connections, and prioritizing the potential solutions,
3. Create innovative solutions to problems through creative thinking,
4. Communicate ideas and information effectively, and

5. Seek ongoing improvement to integrate knowledge and skill through reflection on their thinking and learning processes.

Three student-centered links support development of these learning outcomes among participants and are, therefore, expected to enhance all learning among undergraduate students. The *Introduction: Orientation Programming* link is designed to ingrain and foster critical thinking and problem-solving strategies in new freshmen by introducing to them critical thinking and problem-solving concepts, fostering a community of learning, and creating an expectation of academic rigor to prepare them for university study. This goal is achieved through the completion of a critical thinking group exercise during new student orientation.

In the Classroom: Curricular Integration integrates the teaching of critical thinking and problem-solving skills throughout the undergraduate curriculum, in both general education and major program courses. Extensive faculty and staff development activities provide support for this program link, allowing departments, faculty, and staff to define, focus, and assess critical thinking within the disciplines to help students improve their skills.

The *Beyond the Classroom: Experiential Learning* component provides students with opportunities to participate in learning using critical thinking outside the classroom that will help them relate to their university studies. In this component, student participation in experiential and service learning activities is encouraged, tracked, and rewarded through a program of recognition and awards.

Assessment of *ThinkAchieve* is essential for program development and success. Annual assessments of the three links and progress toward student learning outcomes provide program staff the information needed to guide programmatic revisions toward attainment of desired outcomes. These assessments and corresponding recommendations are provided in this report.

II. Assessment Methodology

Assessment of the *ThinkAchieve* program is guided by an assessment plan. The original draft was developed by the *QEP Committee* during the project development phase. This plan was later enhanced by the Assistant Director of Strategic Planning for Assessment, who was hired to coordinate and lead the assessment activities of the QEP, with input from the Dean of Lifelong Learning who played an integral role in the development of the design. Refinements to this plan emerged from discussions of the *ThinkAchieve Assessment Taskforce*. The assessment plan is in Appendix A (see pp. 30-32).

The assessment includes a process evaluation that describes and evaluates program implementation activities within each of the three links. Process data in this assessment are outlined on the first page of the assessment plan and include descriptions of activities, products, and programs; participation in trainings, events, and activities; and qualitative and quantitative survey data. Process evaluation findings for Year One are in Section III of this report (pp. 5-12).

Outcome evaluations demonstrate potential impact of program activities on participants and are included in the assessment. Student learning outcomes are assessed within programmatic links. Ten outcomes are anticipated across the three components as outlined on page two of the assessment plan. This part of the evaluation includes data from surveys, assessments collected in the classroom, experiential learning program data, and institutional assessments. As the first year of the program primarily involved program development and faculty and staff development, this portion of the outcome assessment is scheduled to begin in Year Two when all components of the program are in full implementation and impact on outcomes can begin to be realized.

The third assessment, as seen on page three of the plan, involves the tracking of progress toward five student learning outcomes that cumulatively define critical thinking as specified by

the *ThinkAchieve* program. Baseline data from entering freshmen and graduating seniors were collected in Year One using specific items on the Critical Thinking Assessment Test (CAT). In Year Two, experiential learning program data will be added to this assessment. Baseline data on student learning outcomes are presented in Section IV of this report (pp. 13-15).

Data from additional measures of critical thinking are also included in this assessment (see page three of the assessment plan). These include the CAT total score, critical thinking measurements from the ETS Proficiency Profile Exam (PPE), and perception data from the National Survey of Student Engagement (NSSE) and Faculty Survey of Student Engagement (FSSE). Section IV of this report (pp. 16-21) presents these findings. Departmental institutional effectiveness data and surveys of recent graduates and area employers will be added to this part of the evaluation next year.

Assessment data were collected by program staff members, trained faculty and staff, and the Office of Planning, Evaluation, and Institutional Research. These data were then analyzed and presented in this report by the Assistant Director of Strategic Planning for Assessment. Input on conclusions and recommendations was sought first from program staff and their supervisors and then from the *ThinkAchieve Advisory Board*. Agreed upon recommendations are included in this report.

The assessment goal for Year One was to gather baseline data from which more specific objectives and benchmarks can be determined. The *ThinkAchieve Assessment Taskforce* will convene in Fall 2012 to review this report and recommendations and set more specific benchmarks. Progress will be measured and reported over the remaining four years of the plan. Results will be compared to baseline data and will assess student changes in critical thinking and problem-solving skills, thus evaluating the total impact of *ThinkAchieve* activities.

III. Year One Implementation Activities

Year One was particularly productive in the kick-off of the *ThinkAchieve* program with various implementation activities occurring within each of the three links. Assessment activities were conducted to provide information and data needed to guide Year Two. Strong leadership was provided this year to guide program staff as needed. Program activities are outlined in the five-year implementation plan shown in Appendix A (see p. 33) and are described below.

Introduction: Orientation Programming

The *Introduction: Pre-Orientation/Orientation* link is designed to ingrain and foster critical thinking and problem-solving strategies in new freshmen by introducing to them critical thinking and problem-solving concepts, fostering a community of learning, and creating an expectation of academic rigor to prepare them for university study. This goal is achieved through the completion of a critical thinking group exercise during new student orientation.

In Spring of Year One, two situational case studies – a social media scenario and a college drinking case – were developed and revised with input from faculty, staff, and students (see orientation programming documents in Appendix B, pp. 35-40). The faculty developer designed the curriculum and recruited faculty and staff to facilitate the sessions. Facilitator trainings were held in May, and sessions began in June. The first two of seven scheduled orientation days constituted pilot sessions. The sessions began with an introduction to the concept of critical thinking and facilitators informed students they will be expected to be critical thinkers at UTC. Students were then given one of the case studies chosen by the facilitator and used the group process to explore Wolcott's (2006) *Steps for Better Thinking.* Facilitators then debriefed students with an overview of the critical thinking process, introduced them to the definition of critical thinking, emphasized that they have taken the first step in becoming critical

thinkers at UTC, and asked them to complete a short assessment.

Based on facilitator feedback of the pilot sessions, three revisions were made. The social media scenario was eliminated because it caused a disruptive gender divide during discussion. Additionally, group size was reduced from 25-30 students to 12-15 students to allow for greater student participation in discussion, resulting in an increase in number of sessions and a reduction in the number of facilitators per session. Instead of being co-led by two facilitators, the remaining sessions were led by one facilitator assisted by an orientation leader.

A total of 168 critical thinking sessions were conducted between June 8 and July 27, 2012, with six sessions across four time slots on seven dates (see orientation data on p. 40). In all, 2,292 students attended the sessions and were introduced to critical thinking. Student and faculty orientation assessment data will be analyzed in Fall 2012.

One aspect of this component was not completed this year - the pre-orientation module. Designed to introduce the concept of critical thinking to students prior to arrival on campus, the case study is presented during the online registration process, allowing students more time to review and reflect before arriving for orientation. However, due to a large entering freshmen class this year, the registration process began earlier than usual (January 2012), and the module had not been developed. So that all students would receive the same level of exposure, it was decided to present the case study to all students at the beginning of orientation sessions this year. Follow-up conversations with Orientation Office staff suggested that this may be the better strategy anyway, as some students register months prior to orientation and will have forgotten the module by the time they arrive. Others arrive overwhelmed and underprepared. Examination of students' completion of other required non-program pre-orientation activities (e.g., only about one in three students complete the first year reading and about 70% of students complete the

required Academic Interest Questionnaire in a timely manner) lent support for the decision to eliminate the pre-orientation component of this link for the remainder of the program.

In the Classroom: Curricular Integration

In the Classroom: Curricular Integration integrates the teaching of critical thinking and problem-solving skills throughout the undergraduate curriculum, in both general education and major program courses. Extensive faculty and staff development activities provide support for this program component, allowing departments, faculty, and staff to define, focus, and assess critical thinking within the disciplines to help students improve their skills.

In Fall 2011, faculty development activities were led by the Dean of Lifelong Learning. In December, the QEP Faculty Developer was hired, which allowed for an expanded focus and delivery of this QEP component. Year One was particularly fruitful in development offerings, which included seminars, webinars, workshops, retreats, faculty learning communities, and book clubs focusing on developing, delivering, and assessing critical thinking strategies in the classroom (see Appendix C, pp. 42-52, for sample program materials and participation data). Other approaches included introducing incoming faculty to the QEP and its objectives at new faculty orientation and involving faculty and staff in introducing concepts of critical thinking to incoming freshmen at new student orientation. Faculty and staff also attended national train-the-trainer sessions on the Critical Thinking Assessment Test (CAT) and participated in CAT grading sessions on campus. A total of 550 faculty and staff engaged in 1,636.5 hours of development activities (ranging from 15 minutes-16 hours per event) in Year One.

Faculty and staff evaluations from 96 attendees of two *ThinkAchieve* workshops, the critical thinking instructional excellence retreat, and the spring CAT grading session (see p. 52) reveal that participants were quite pleased. Respondents either ‘agreed’ or ‘strongly agreed’ that

the sessions were valuable and a good use of time, that the content was relevant and format effective, and that they felt more informed, will use what they've learned in their job, and plan to continue to educate themselves about the topic[1]. These findings are supported by the assessment of faculty development needs on this survey, which reveals that close to half of the respondents (40.6%) expressed the need for more *ThinkAchieve* seminars. Other development needs included teaching and learning seminars on other topics (22.9%), faculty learning communities (17.7%), Blackboard training (15.6%), software/hardware training (10.4%), book clubs (10.4%), and other additional training needs (10.4%) such as advisement training.

To provide further support for faculty and staff in Year One, online resources, including the *ThinkAchieve* website, and Facebook and Twitter pages, were updated and maintained. Also, the *ThinkAchieve Grants Program Taskforce* was formed (see Program Leadership, Appendix F, p. 85) and the Grants Program developed and implemented to encourage faculty and staff initiation of projects designed to facilitate students' critical thinking. To date, three in-the-classroom grants totaling $2,916 have been awarded to four faculty members, and seven beyond-the-classroom grants totaling $8,741 have been awarded to 11 faculty members. See pages 53-58 for a description of grant criteria and the current awards.

One planned activity that did not begin in Year One, as recommended by the *ThinkAchieve Grants Program Taskforce*, was the implementation of the Faculty Mentor Awards. In lieu of its development, the Grants Program was implemented first (earlier than suggested in the implementation plan). The strategy is to encourage faculty and staff to initiate programs pertaining to critical thinking, assess them, and improve upon their technique if needed. Those employees who are or become successful in their activities will be identified as candidates for the Faculty Mentor Awards Program. Ten grants were awarded in Year One, and assessment data will be

[1] Open-ended comments regarding the strengths and needed improvements to sessions are currently being analyzed.

available in the fall. The Faculty Mentors Awards Program will begin in Spring 2013 when potential mentors have been identified.

Institutional effectiveness data pertaining to critical thinking were also not collected and assessed in Year One. Because program staff was not hired until December 2011 and January 2012 and departmental goals and outcomes were due in September, the coordination needed to lead this effort was not in place. Plans for collecting this data in Year Two are in place and will begin with presenting the information at Deans Council, Full-Faculty Meeting, Academic Council of Department Heads, and departmental visits.

Beyond the Classroom: Experiential Learning

The *Beyond the Classroom: Experiential Learning* component provides students with opportunities to participate in learning using critical thinking outside the classroom that will help them relate to their university studies. Student participation in experiential learning activities is encouraged, tracked, and rewarded. Students and faculty propose activities for approval. Approved activities are assigned a point value based on the extent of work, critical thinking, and problem-solving effort required. Student awards and recognition at graduation is based on the number of points earned and documented on a co-curricular transcript.

In January 2011, the Coordinator for Experiential Learning was hired to develop and coordinate the experiential learning program. In the spring, the *ThinkAchieve Awards Taskforce* was formed (see Program Leadership, Appendix F, p. 85) which assisted in developing criteria and guidelines for the program (see program documents in Appendix D, pp. 60-69). The points to graduation rubric outlines ways in which 120 points can be earned to reach *ThinkAchieve Beyond the Classroom* program graduation and includes points values for engagement in study abroad, internship, leadership roles, class or community projects, and event attendance. To attain

points, students or faculty can initiate experiential learning contracts within these categories and submit them for *ThinkAchieve* approval. On both contracts, students must complete pre-flection questions designed to stimulate critical thinking about the anticipated experience. If the contract is approved by the *ThinkAchieve Awards Taskforce*, students must also complete reflection questions to assess the critical thinking at the end of their experience. For smaller events, students can complete and submit a student reflection card for approval. Answers to reflection questions on all of these documents will be used to assess learning outcomes within this link.

The Coordinator for Experiential Learning also developed the co-curricular transcript process in Year One, which requires students to log into Orgsync.com and document approved beyond the classroom involvement (see pp. 70-75). The Coordinator for Experiential Learning will verify and approve the entries against the approved learning contracts and reflection cards. Once students attain 120 points, they will be recognized at an annual awards ceremony.

This program link has been greatly promoted in Year One through meetings with academic departments, faculty and staff, student leaders, and community partners. Information about the program can also be found on the *ThinkAchieve* website's *Beyond the Classroom* link.

Also, to encourage incoming students' connection with the learning that can happen in the community, *Chattanooga Connections* has been planned for students during UTC Welcome Week at the beginning of the Fall 2012 semester. New students have an opportunity to spend half a day engaging in various structured activities in the community so they can learn about Chattanooga and form connections with organizations and people while becoming acquainted with the *Beyond the Classroom* program. Nearly a dozen activities have been planned (see p. 76), with 110 students registered to date. An additional 22 students will earn *ThinkAchieve* points for leading the events. Five faculty are also event leaders. Information about the event is posted on

ThinkAchieve website's *Beyond the Classroom* link. A postcard highlighting the event was included in orientation packets, and information about the event was presented at orientation.

Assessment Activities

Assessment activities were also conducted in Year One to provide information and data needed to guide Year Two. The Assistant Director of Strategic Planning for Assessment was hired in January 2011 to coordinate and lead *ThinkAchieve* assessment activities. The original draft of the assessment plan was enhanced, with the guidance from the Dean of Lifelong Learning who played an integral role in the development of the design. The *ThinkAchieve Assessment Taskforce* was formed (see Program Leadership, Appendix F, p. 85) and met frequently in the spring semester to ensure a thorough and useful assessment in Year One. The taskforce helped to further refine the assessment plan (shown in Appendix A), develop program hypotheses, design process evaluations, review institutional assessments, and discuss strategies needed to collect, analyze, and report data in a meaningful and useful way (see topical session schedule, sample agendas, and sample process evaluations in Appendix E, pp. 78-83).

Program data were also collected and analyzed and are presented in this report. Process data, such as event participation and demographic information, were tracked by program staff or gathered from program surveys collected at the conclusion of program activities. CAT data were collected and scored by trained faculty and staff, and other institutional assessment data were provided by the Office of Planning, Evaluation, and Institutional Research. Yearly assessment reports, including the Tennessee Higher Education Committee Funding Performance Report submitted on August 1, 2012, and this internal program assessment report were compiled by the Assistant Director of Strategic Planning. This internal report was shared with program staff and the *ThinkAchieve Advisory Board* who provided input on recommendations for Year Two. The

final report will be shared with UTC governance, academic departments, faculty learning communities, and other faculty and staff to guide programmatic revisions in Year Two.

Program Leadership

Finally, *ThinkAchieve* staff members were supported by strong program leadership in Year One. In addition to one-on-one meetings and interactions, the supervisors of the Faculty Developer, Coordinator for Experiential Learning, and Assistant Director of Strategic Planning for Assessment met with the team regularly to provide guidance and input as requested.

Additionally, as seen in Appendix F (p. 85), 14 faculty members from 12 departments across all four colleges participated on one of the three taskforces, as did four staff from three administrative units and an undergraduate student. This campus-wide leadership in assisting with the development of major components of the *ThinkAchieve* program was invaluable.

Strong leadership was also demonstrated by the *ThinkAchieve Advisory Board* in Year One (see p. 86). Ten faculty members from nine departments across all four colleges and the library participated on the Advisory Board, as did program staff supervisors and three additional staff members from varying administrative units. One undergraduate student also served on the Board. The Board served in its governance role by meeting with program staff three times during the Spring semester to provide input on progress made and suggestions for future directions. The Advisory Board also met with the team to provide input on recommendations in this report.

Thirty three participants, a total of 21 faculty from 16 various departments across all colleges and the library as well as ten staff members from seven administrative units and two undergraduate students, contributed to the *ThinkAchieve* program in some way in Year One (see p.87). Program successes in the first year of program implementation can be attributed, in part, to this level of campus-wide participation and support.

IV. Student Learning Outcomes and Additional Measures of Critical Thinking

To determine impact of program activities on participants, assessments were taken to measure student learning outcomes. Baseline data from entering freshmen and graduating seniors were collected using the Critical Thinking Assessment Test (CAT), a cognitive measure used to assess four broad areas of critical thinking (evaluating and interpreting information, problem-solving, creative thinking, and effective communication). Comprised of primarily short essay questions derived from real-world situations, the CAT is considered the program's core assessment measure because the specific skills assessed align closely with four of the five student learning outcomes. CAT data are presented in Appendix G (pp. 89-94).

The test was administered to 179 freshmen enrolled in Freshmen Seminar in Fall 2011 and to 200 randomly selected graduating seniors as an exit exam in Spring 2012. Both samples were representative of the student population in terms of demographic characteristics, though differences in racial/ethnic categories and method of selection make these percentages difficult to compare. Nearly half of senior participants were from the College of Arts and Sciences (45.5%), and one in five were from the College of Business (21%), which is proportionate to the percentage of senior graduates in Spring 2012 (41.3% and 20.1% respectively). However, slightly more senior participants were from the College of Engineering and Computer Science (17.5% compared to 10% of graduates), and fewer were from the College of Health, Education, and Professional Studies (14.5% compared to 25.8% of graduates).

The first four student learning outcomes were assessed using the CAT, with each outcome assessed by specific items that align with target skill sets. Student learning outcome five was not assessed this year. Because this outcome is assessed using experiential learning program data and this component of the program begins in Year Two, this assessment will be

added to the evaluation next year. The first four student learning outcomes are presented below.

Student Learning Outcome 1

Students will identify, evaluate, and interpret information, by raising pertinent questions and identifying uncertainties.

Student learning outcome one was measured by CAT questions 1, 2, 5, 8, 10, 11, 13, and 14 (see p. 90). Senior participants scored higher than freshmen participants on all items. Four out of eight of these skill areas received significantly higher scores. Three of four areas in which seniors did not score significantly higher than freshmen pertained in some way to working with *relevant information* when *problem-solving* – Q10) separating relevant information from irrelevant information when solving a real-world problem, Q11) using and applying relevant information to evaluate a problem, and Q14) identifying and explaining the best solution for a real-world problem using relevant information. This skill area could be a target for focus in Year Two.

Student Learning Outcome 2

Students will solve problems by determining limitations, making connections, and prioritizing the potential solutions.

As shown on page 90, CAT questions 4, 7, 10, 11, 12, 13, 14, and 15 were used to assess student learning outcome two. Again, senior participants scored higher than freshman participants on all items. Similarly, half of the differences were significant. Of the others, three of four pertained to working with relevant information when problem-solving as identified in student learning outcome one above (10, 11, 14). Additionally, senior participants did not score significantly higher than freshmen on Q7) *identifying additional information needed to evaluate a hypothesis.* However, this skill area is also assessed by CAT question 4, in which seniors did score significantly higher. Scores on these two items will be closely examined in next year's assessment.

Student Learning Outcome 3

Students will create innovative solutions to problems through creative thinking.

The third student learning outcome was assessed using CAT questions 3, 4, 6, 7, 9, and 15 as illustrated on page 91. Keeping with the trend, seniors scored higher on all of these items pertaining to using creative thinking to create innovative solutions to solve problems. Notably, senior participants scored significantly higher than freshman participants on five of the six skill areas assessed, suggesting this may be a solid area of growth among UTC students.

Student Learning Outcome 4

Students will communicate ideas and information effectively.

CAT questions 2, 3, 4, 6, 7, 9, 11, 14, and 15 (see p. 91) were used to assess the fourth learning outcome. Again, seniors scored higher than freshmen participants on all items. Five out of nine items received significantly higher scores. Three of four skill areas that were not have been addressed in outcomes above. The remaining skill area was assessed in Q2) *evaluating how strongly correlational-type data support a hypothesis*. However, two items in which seniors did score significantly higher than freshmen assess similar skill sets (5 and 6). These items will also be monitored in Year Two's assessment to determine whether the same discrepancy exists.

Year One data on the first four student learning outcomes suggests that seniors may be gaining some level of critical thinking skills by the time they graduate, especially creative thinking strategies. Years Two through Five will be important in determining value added to these scores to help assess the amount of skill gained from year to year. It is anticipated the scores of seniors will increase yearly, indicating that more and more exposure to critical thinking strategies, and experiences that lend themselves to using these skills, will be reflected in greater gains as the years pass.

Additional Measures of Critical Thinking

Baseline data from additional measures help capture a snapshot of student skills in critical thinking as an overall construct. These consist of cognitive and non-cognitive measures and include the total scale of the Critical Thinking Assessment Test (CAT), measurements from the ETS Proficiency Profile Exam (PPE), and perception data from the National Survey of Student Engagement (NSSE) and Faculty Survey of Student Engagement (FSSE).

Critical Thinking Assessment Test

As mentioned previously, seniors scored higher than freshmen on all CAT items, with the majority of scores significantly higher. As seen in the total CAT scale (see p. 92), seniors scored significantly higher than freshmen on two-thirds of the items (10/15) and on the total score (senior mean=16.09, freshmen mean=12.56). Two of the non-significant skill areas seemed to be measured in other items that were significantly higher for seniors. The three similar non-significant score differences pertain to using relevant information to solve problems.

In comparing participant scores to national means (see p. 93), most of the freshmen scores were statistically the same as national freshmen scores, with one-third of the skill areas assessed and the total score being significantly lower. This finding suggests that UTC freshmen may be similar to "average" freshmen students when it comes to many critical thinking skills. The senior scores, however, reveal an opposite trend. A little over two-thirds of senior scores and the total score were significantly lower than national senior scores, suggesting that UTC seniors may not be gaining critical thinking skills to the level of "average" senior students by the time they graduate. Also notable is that the differences were greater between the senior samples than they were between the freshmen samples, also indicating that UTC students may not experience as much growth as the "average" student when it comes to critical thinking.

Another important finding is that two of the skill scores of senior participants that were not significantly different from the national mean of senior test-takers are items pertaining to working with relevant information to solve problems (questions 10 and 11). So, although UTC seniors did not score significantly higher than UTC freshmen on these items, they scored relatively the same as the "average" senior, suggesting this is the norm for this skill set among this population.

Further analysis of senior CAT data comparing scores across the colleges to the UTC and national means reveals other important findings. As illustrated on page 94, there is variation in total CAT scores across the colleges, ranging from a mean total score of 13.94 for participants from the College of Health, Education, and Professional Studies (CHEPS) to a mean of 18.14 from participants from the College of Engineering and Computer Science (ECS). Most individual item means from each of these colleges reflect this trend with 10/15 CHEPS scores on the lower end of the range and 11/15 of the ECS scores on the higher end of the range.

The ECS total score (mean=18.14) is close to the national total score (mean=19.04)[2]. Most individual item means were also close, with six item scores higher than national scores. Overall, the UTC total score (mean=16.09) is best represented by the College of Business (COB) total score (mean=16.27) which is slightly higher that the total UTC mean, and the College of Arts and Sciences (A&S) total score (mean=15.90) which is slightly lower.

ETS Proficiency Profile Exam

Another critical thinking measure used to assess the *ThinkAchieve* program is the ETS Proficiency Profile Exam (PPE). The PPE is also a cognitive measure and is administered to graduating seniors for general education outcomes assessment. This test provides proficiency levels, scale scores, and institutional rankings of several skill and content areas, including critical thinking. Because the PPE is administered as an exit exam to nearly all UTC graduating

[2] UTC does not have access to the raw national data and therefore cannot conduct significant tests on these means.

seniors[3], it is a strong indicator of skill competency of undergraduate students at the end of their university experience. PPE data are presented in Appendix H on page 96.

The PPE was administered to 1,254 graduating UTC seniors in 2010-2011 (prior to the program) and to 1,189 graduating seniors in 2011-2012 (Year One). Preliminary comparisons suggest that graduating seniors are declining in their critical thinking skills, from 9.49% *proficient* in 2010-2011 to 7.03% *proficient* in 2011-2012 (2.46% decrease). Over three-quarters of students (78.83%) were ranked *not proficient* and this number rose 4.5%[4]. The total mean score declined minimally (from 112.93 to 111.84), though this resulted in a 20 point drop compared to the national pool of PPE test-takers, from the 39th to the 19th percentile.

An examination across colleges on the PPE reveals a slightly different trend than did CAT college-level analyses. COB scores were on the low end of the range with 4.07% of students *proficient* in critical thinking, 81.71% *not proficient*, with a mean score of 112.12, and in the 19th percentile compared to other institutions in the nation. CHEPS followed closely (5.86% proficient, 81.69% not proficient, mean=112.03, 40th percentile). A&S scores fell on the high end of the range with 9.34% *proficient*, 76.43% *not proficient*, a mean score of 112.12, and in the 40th percentile. ECS scored similarly (8.33% *proficient*, 77.78% *not proficient*, mean=112.03, 40th percentile).

Proficiency levels for UTC graduating seniors are quite low, and all of the colleges except CHEPS declined in the number of students who scored *proficient* in critical thinking. Relatedly, all colleges increased in percent *not proficient*, though CHEPS' increase was slight. A&S and ECS had notable decreases in proficiency (4.95% and 2.65%) and even larger increases in percentages of students scoring 'not proficient' (9.11% and 8.27%). Means scores also dropped across the colleges, resulting in a 20 point decrease compared to national pool of PPE test-takers on the total

[3] The PPE is administered to all graduating seniors as an exit exam, with the exception of 200 seniors randomly selected to take the CAT for *ThinkAchieve* assessment.
[4] The third category reflects 'marginal proficiency' levels.

score and all college level scores, with the exception of CHEPS who moved up one percentile.

It should be noted that the ranking of critical thinking scores by UTC college varies slightly between the PPE and the CAT, with ECS students scoring highest on the CAT and second highest on the PPE, and CHEPS students scoring lowest on the CAT and second to lowest on the PPE. Though these tests have good criterion validity ($r=.562$, $p < .01$) and assess similar skills (TTU, 2010), they measure different aspects of critical thinking using different methods. *The PPE critical thinking scale is part of a reading proficiency multiple- choice test.* Students are asked to read selected passages within humanities and natural and social sciences and to respond to questions to determine reading proficiency at three levels. The first level tests the basic reading skills of recognizing factual information and understanding the meaning of words and phrases in a reading passage, while the second level assesses five higher level skills involving recognizing, identifying, understanding, and synthesizing various pieces of information in the passage. Students who are proficient at level two are typically, but not necessarily, proficient at level one. Reading level three constitutes the critical thinking component and involves a set of seven more complex skills such as evaluating competing causal explanations, recognizing flaws and inconsistencies in an argument, determining the relevance of information, and determining the appropriateness of procedures. Students who are proficient at level three must be proficient at the first two reading levels.

The CAT is primarily a short-essay test which requires participants to read various real-world scenarios and to respond to questions with written answers. There are also a few yes/no and mathematical calculation responses. Critical thinking on this test is measured by the ability to evaluate information, think creatively, problem-solve, and communicate effectively. These components are assessed using a 15-item scale that contains similar, but more encompassing, skills than measured by the PPE Reading-Critical Thinking level three, such as summarizing the pattern

of results in a graph without making inappropriate inferences, using basic mathematical skills to help solve a real-world problem, and evaluating how strongly correlational-type data supports a hypothesis. Critical thinking is the only construct measured and participants have the ability to receive points on every question, unlike the PPE that requires participants to reach proficiency at reading levels one and two in order to receive points for critical thinking. Thus, the PPE may be considered a more narrow and conservative test of critical thinking than the CAT. This is why it is important to include multiple measures when evaluating impact of an intervention. Taken together, they can provide a broader picture of what is being accomplished and in what way.

National Surveys of Faculty and Student Engagement

The NSSE and FSSE are surveys of student and faculty perceptions of student engagement and are used to compare student and faculty perceptions regarding emphasis on higher-level learning in the classroom. Though data are self-reported, these surveys strengthen the assessment plan because they provides a unique opportunity to examine discrepancies between what faculty think they are teaching and what students believe they are learning in class. These data are presented in Appendix I (pp. 98-99).

The surveys were administered to 133 faculty and 779 students at UTC in Spring 2011 and 166 faculty and 814 students in Spring 2012. Baseline data are striking (see p. 98). The 2011 survey found that, while only 28% of faculty reported emphasizing *memorization of facts, ideas, or methods from course readings* in lower division classes, 74% of first-year students reported they are expected to do so (46% difference). The findings were similar for faculty reports of emphasizing memorization in upper division classes versus senior student perceptions (22% and 69% respectively, 47% difference). Further, higher level learning skills thought to be emphasized in the classroom (synthesizing, analyzing, applying, and evaluating) by faculty,

were less likely to be deemed so by students.

Students were also asked to indicate the extent to which their college experience contributed to their development of critical and analytical thinking skills and the ability to solve complex real-world problems, while faculty were asked to indicate the extent to which they structure their courses to help students develop these skills. Fewer students indicated developing these skills "very much" or "quite a bit" than faculty reported nurturing these skills to this level in their courses. Both of these findings were mirrored in the 2012 sample, though it is promising to note that the discrepancies were not so large in the more recent sample.

Student perceptions of engagement compared to national student means reveal other important findings, as shown on page 99. In 2011, both UTC students and students in the national pool of test-takers reported being asked to *memorize facts, ideas, or methods from course readings* "quite a bit," though UTC senior scores were significantly higher than the national mean. UTC students also reported higher level learning (synthesizing, analyzing, applying, evaluating) was emphasized in the classroom "quite a bit," but the average from the national pool of test-takers indicated this type of learning was emphasized to a greater extent, with many of the mean frequencies significantly higher. Similarly, both samples of seniors felt that their institutions contributed to their ability to think critically and analytically and to solve complex real-world problems "quite a bit," but again this was thought to be emphasized more so at a national level and, in most cases, significantly so. These data were nearly identical in 2012.

These findings suggest that, although higher level learning is perceived to be emphasized at UTC and for the "average" college student, it may be emphasized less at UTC compared to the norm. Further, both UTC students and national test-takers perceived emphasis on memorization, though UTC seniors report this more so than the "average" senior.

V. Conclusions and Recommendations

Year One of the *ThinkAchieve* program has been particularly productive. Program personnel are in place, the taskforces active, and the Advisory Board fulfilling its governance role. The first round of critical thinking orientation sessions is complete, faculty/staff development activities are in full swing, the experiential learning program is ready for kick off, and data have been collected, analyzed, and reported. Implementation activities have gone mostly as planned.

Nearly 2,300 new students participated in critical thinking sessions at orientation this summer and were introduced to the concepts of critical and creative thinking in a structured group exercise. Orientation assessment data will be analyzed in Fall 2012. Year One facilitators should be involved in the reviewing of assessment data and planning for Year Two. Not only are they most knowledgeable about the content and structure of the activity, but involvement will facilitate reflection and assessment of strategies used in the sessions and, ideally, their own classrooms/units.

Faculty and staff development activities pertaining to developing, delivering, and assessing critical thinking strategies were abundant in Year One. A total of 550 employees participated in over 1,600 hours of activities which included seminars/webinars, workshops/retreats, faculty learning communities, book clubs, faculty/student orientation activities, and CAT train-the-trainer and on-campus grading sessions. Additional process and outcome evaluations will need to be developed in Year Two to assess components not reviewed this year, along with a more thorough assessment of faculty and staff development needs across the campus.

The Grants Program was developed and implemented this year instead of the Faculty Mentors Awards program as planned. This strategy was implemented to facilitate the identification of potential mentors who successfully implemented projects supported by a *ThinkAchieve* grant. Ten grants were awarded in Year One. Assessment data pertaining to critical thinking should be

evaluated this fall so that the Faculty Mentor Awards program can be in place by Spring 2013.

Because deadlines for submission of departmental goals and outcomes had passed by the time program staff were hired, institutional effectiveness data pertaining to critical thinking were not collected in Year One. It is crucial that this data be collected in Year Two. Goals and outcomes guide activities to be implemented within classrooms/units, and requiring at least one of these to be related to critical thinking will help integrate this initiative across the undergraduate experience.

The experiential learning program is ready for kick-off this fall. Criteria and guidelines for the program have been developed and the co-curricular transcript is ready for implementation. Also, *Chattanooga Connections* is planned for UTC Welcome Week with 110 new students registered for one of eleven experiential learning activities. Thorough tracking and collection of experiential learning program data will be required in Year Two to assess this programmatic link and student learning outcome five. Assessment of *Chattanooga Connections* will also be needed to help guide decision-making pertaining to this activity in Year Two.

Assessment activities have been plentiful this year. A comprehensive assessment plan is in place, process evaluations have been developed, and baseline outcome data collected, analyzed, and presented in this report. Assessment of learning outcomes within the three programmatic links is needed in Year Two. Also, benchmarks need to be determined for the student learning outcomes pertaining to critical thinking so that progress can be tracked and measured over the remaining four years. The *ThinkAchieve Assessment Taskforce* should determine these benchmarks.

Participation in *ThinkAchieve* taskforces and the Advisory Board has reflected strong leadership of university 31 employees this year. However, more proportionate representation among colleges would be beneficial to ensure broader inclusion of perspectives and expertise as we work to infuse the *ThinkAchieve* initiative more fully across the campus in Year Two.

While the *ThinkAchieve* program was being developed and initiated in the first year, institutional assessments of students' ability to think critically were taken to provide baseline measurements against which growth can be assessed over the next four years. Student learning outcomes were assessed using the Critical Thinking Assessment Test (CAT). Additional measures of critical thinking included the CAT total scale, measurements from the ETS Proficiency Profile Exam (PPE), and perceptions data from the National Survey of Student Engagement (NSSE), and Faculty Survey of Student Engagement (FSSE).

CAT findings suggest that UTC students do gain some level of critical thinking skills by the time they graduate, especially skills that involve creative thinking when solving problems. However, they appear to have difficulty working with relevant information when problem-solving, as seniors scored statistically the same as freshmen on the items that assess variations of this skill set. Interestingly, this was also true for the national pool of CAT test-takers, suggesting this may be the norm for the "average" student. Nonetheless, UTC should strive to focus on this area so we can demonstrate significant growth among our students as well as exceed the national mean.

Other comparisons to national CAT means indicate that our freshmen students are relatively comparable to the "average" freshmen when it comes to the amount of critical thinking and problem-solving skills they possess. This cannot be said for our seniors, however, who scored significantly lower than the national pool of senior CAT test-takers on the majority of items. This apparent lack of growth in critical thinking among our students underscores the importance of integrating the *ThinkAchieve* initiative across the entire undergraduate experience. Further, examination of senior CAT scores across the colleges reveals differences in students' critical thinking abilities. Implications for critical thinking strategies and activities within each college, both in and beyond the classroom, should be considered by college deans and department heads.

PPE results reveal more disappointing news. UTC graduating seniors' proficiency levels in critical thinking are quite low and declining, with only 9.5% of seniors scoring *proficient* in critical thinking in Spring 2011 and 2.5% fewer meeting this criteria in Spring 2012 (7% *proficient*). This decline resulted in a 20 point drop in institutional rankings in one year. In 2011, 39% of institutions who participated in the PPE scored below UTC. Only 19% did so in 2012. Further analysis of PPE scores revealed similar differences in students' proficiency levels across colleges as did the CAT, though rankings were slightly different. This variation in ranking on the two tests highlights the importance of using multiple measures to assess critical thinking. The *ThinkAchieve Assessment Taskforce* should conduct a thorough review and comparison of these two measures in Year Two.

A comparison of UTC faculty and student responses to the NSSE and FSSE revealed disparate perceptions regarding the amount of emphasis placed on higher level learning in the classroom. Considerably fewer faculty than students reported emphasis on *memorization* in their classes, while fewer students than faculty felt higher level learning skills (*synthesizing*, *analyzing*, *evaluating*, and *applying* information) were emphasized. Further, a comparison of UTC student perceptions to those of students in the national pool of survey-takers revealed that UTC students felt they are expected to *memorize* more, and participate in higher level learning skills less, than the "average" college student. It is unclear whether faculty are indeed expecting less memorization and more higher level thinking than students realize, or if students are more perceptive about what is actually being emphasized in the classroom. A challenge for Year Two will be to identify ways in which this perception gap can be decreased or eliminated.

Baseline data collected from the CAT, PPE, and NSSE/FSSE provide strong support for this critical thinking initiative at UTC. To fully integrate the *ThinkAchieve* program across the entire undergraduate experience, two major recommendations for Year Two are as follows.

1) *ThinkAchieve* needs another strong kick-off in Year Two. This kick-off should be at the start of the fall semester, supported by senior leadership and highly visible to the campus. Suggestions include major announcements at employee events, UTCINFO messages sent by the Chancellor, information about the QEP sent out in the employee newsletter, QEP articles featured in the student newspaper, QEP informational sessions offered to explain the basics and expectations of the program, updating the *ThinkAchieve* and SACS websites with Year One program highlights, and more widely and varied distribution of program marketing materials.

2) Baseline data need to be shared across campus and detailed action plans developed. Data sharing should begin with deans and department heads. Meetings should occur in September so that data can inform the development of departmental goals and outcomes, of which at least one should pertain to critical thinking this year. To assist in writing outcomes, a seminar/workshop could be offered specifically to department heads. Heads could attend CAT grading sessions to learn more about critical thinking assessment. Departmental outcomes could focus on critical thinking as measured by the CAT, PPE, or another assessment tool; or they could focus on the mismatch in faculty and student perceptions of learning in the classroom.

Faculty and staff also need to review and respond to the data. Data should be shared with faculty learning communities, at faculty senate, full-faculty meetings, and academic and non-academic departmental meetings. Employees should assess their own skills, and participate in the various *ThinkAchieve* development opportunities. More/different employees should be recruited to facilitate student orientation and for CAT Grading sessions in Year Two. Also, as faculty and staff do respond by engaging in *ThinkAchieve* activities, their participation should be valued and recognized by colleagues, department heads/supervisors, and deans. Ideally, participation will also be incorporated into the annual performance review process at UTC.

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APPENDIX

Appendix A

Assessment Plan

Implementation Plan

ThinkAchieve: Creating Connections Assessment Plan

To Be Evaluated	Program Activities (Process Evaluation)	Measure(s)	1st Report	Responsible Person/Unit
Pre-Orientation/ Orientation Program	• Design online module • Pilot/revise online module • Train faculty, staff facilitators • Roll out orientation module	• Attendance data • Faculty, student surveys	• YR1 • YR2	• Orientation Office • Trained faculty/staff
Development Activities/ Curricular Integration	• Seminars/webinars/workshops/retreats • Faculty learning communities/book clubs • New faculty/adjunct orientation • Faculty, staff facilitation of new student orientation • CAT TTT training/CAT training/grading • Assess faculty development needs • Update/maintain online resources • Awards program taskforce • Mini-grants program awards • Faculty fellows/mentors awards •	• Attendance, # hours • Attendance, # hours • Attendance, # hours • Attendance, # hours • Attendance, # hours • Survey, evaluation • Description • Description • Number, evaluation • Number, evaluation	• YR1 • YR1 • YR1 • YR1 • YR1 • YR1 • YR1 • YR1 • YR1 • YR2	• Faculty Developer, Taskforce
Experiential Learning Program	• Experiential learning taskforce • Develop criteria/guidelines for ThinkAchieve Awards • Develop co-curricular transcript • Promote ThinkAchieve Awards program • Implement Awards program/co-curricular transcripts • Plan/implement awards program celebrations	• Description • Description • Description • Description • Number of ThinkAchieve Awards experiences proposed • Number of ThinkAchieve Awards experiences approved • Number of ThinkAchieve student participants • Number of ThinkAchieve points awarded • Description, number of awards, attendance	• YR1 • YR1 • YR1 • YR1 • YR2 • YR2 • YR2 • YR2 • YR2	• Experiential Coordinator, Taskforce

To Be Evaluated	Student Learning Outcomes within Program Links	Measure(s)	1st Report	Responsible Person/Unit
Pre-Orientation/ Orientation Program	• Explore critical thinking and problem-solving concepts • Participate in a community of learning • Model the intellectual rigor expected in college work • Engage in reflection and dialogue	• Faculty, student assessment	• YR2	• Trained faculty/staff
In-the-Classroom Outcomes	• Think critically, be creative in problem-solving, and apply basic analytical reasoning skills • Engage in reflection and dialogue • Consider multiple perspectives in a problem or issue	• NSSE/FSSE • Departmental institutional effectiveness data • Department data from course evaluations • Classroom CAT data • Wolcott Steps for Better Thinking Rubric • Mini-Grants in-the-classroom assessments	• YR2	• Institutional Research • Departments, Institutional Research • Departments, Institutional Research • Trained faculty/staff • Select faculty • Select faculty
Beyond-the-Classroom Outcomes	• Examine, apply, practice, and reflect upon critical thinking skills within approved experiential learning experiences • Perceive connections between academic curriculum and society • Prepare for achievement and contribution to society	• Number of ThinkAchieve student participants • Number of ThinkAchieve points awarded • Student self-reflection • Student survey • Community partner survey • Faculty survey • Departmental institutional effectiveness data • Mini-Grants beyond-the-classroom assessments • CAT (by TA participation) • PPE (by TA participation)	• YR2	• Experiential Coordinator, EL Taskforce • Departments, Institutional Research • Select faculty/staff • Trained faculty/staff • Institutional Research

To Be Evaluated	Critical Thinking Student Learning Outcomes	Measure(s)	1st Report	Responsible Person/Unit
SLO1	• Identify, evaluate, and interpret information by raising pertinent questions and identifying uncertainties	• CAT: Q1, Q2, Q5, Q8, Q10, Q11, Q13, Q14	• YR1	• Trained faculty/staff
SLO2	• Solve problems by determining limitations, making connections, and prioritizing the potential solutions	• CAT: Q4, Q7, Q10, Q11, Q12, Q13, Q14, Q15	• YR1	• Trained faculty/staff
SLO3	• Create innovative solutions to problems through creative thinking	• CAT: Q3, Q4, Q6, Q7, Q9, Q15 •	• YR1	• Trained faculty/staff
SLO4	• Communicate ideas and information effectively	• CAT: Q2, Q3, Q4, Q6, Q7, Q9, Q11, Q14, Q15	• YR1	• Trained faculty/staff
SLO5	• Seek ongoing improvement to integrate knowledge and skill through reflection of thinking and learning processes	• # ThinkAchieve Experiential Learning experiences proposed • # ThinkAchieve Experiential Learning experiences approved • # ThinkAchieve Experiential Learning program students • ThinkAchieve Experiential Learning Student Reflections	• YR2	• Experiential Coordinator
Critical Thinking	• Overall measures of critical thinking	• Total CAT score • PPE critical thinking measures • NSSE/FSSE data • Departmental institutional effectiveness data • Survey of graduates • Survey of area employers	• YR1 • YR2 • YR2 • YR2	• Trained faculty/staff • Institutional Research • Departments, Institutional Research • Institutional Research • Institutional Research

ThinkAchieve: Creating Connections Five-Year Implementation Plan

QEP Theme	Action Item	Pre-YR 1	Year 1 - 2011-2012			Year 2 - 2012-2013			Year 3 - 2013-2014			Year 4 - 2014-2015			Year 5 - 2015-2016		
			Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring	Summer
Pre-orientation/Orientation	Design/revise orientation module			X													
	Train faculty and staff facilitators			X													
	Pilot orientation module			X	X												
	Roll out orientation module				X												
	Assess orientation module																
Curricular Integration	Hire faculty developer		X														
	Convert QEP Committee to ThinkAchieve Advisory Board		X														
	Conduct/assess faculty seminars, institutes	X	X	X	X												
	Faculty attend CAT Train-the-Trainer Conference	X	X	X													
	Conduct/assess CAT training	X	X	X	X												
	Assess faculty development needs	X	X	X	X												
	Introduce new faculty to QEP at orientation	X			X												
	Update/maintain online resources		X	X	X												
	Enter/assess departmental IE data (critical thinking)																
	Implement faculty learning communities			X													
	Faculty learning communities active			X													
	Implement Faculty Mentors Awards																
	Assess Faculty Mentors Awards Program																
	Create Think Achieve Grants Task Force			X													
	Design Think Achieve Grants Program			X													
	Implement Think Achieve Grants Program			X	X												
	Assess ThinkAchieve Grants Program																
	Incorporate programmatic revisions based on yearly assessment																
Experiential Learning	Hire experiential coordinator		X														
	Create Think Achieve Awards Task Force			X													
	Develop criteria/guidelines for Think Achieve awards			X	X												
	Promote Think Achieve Awards Program			X	X												
	Implement ThinkAchieve Awards Program																
	Develop co-curricular transcript			X	X												
	Implement co-curricular transcript																
	Plan/implement award program celebrations																
	Assess ThinkAchieve Awards Program																
	Incorporate programmatic revisions based on yearly assessment																
Institutional Assessment	Hire QEP assessment personnel		X														
	Create Assessment Task Force			X													
	Refine assessment plan			X													
	Develop process evaluations			X													
	Administer and Score CAT		X	X	X												
	Administer PPE		X	X	X												
	Administer NSSE			X													
	Administer FSSE			X													
	Compare NSSE/FSSE Results				X												
	Prepare ALL yearly assessment reports				X												

Appendix B

Orientation Programming

Documents and Data

UTC Freshman Orientation
Case Study 1
Social Media Scenario
(eliminated after pilot sessions)

Erica is excited to start at UTC this fall. Over the summer, she broke up with her boyfriend after he cheated on her at their graduation party. She hopes to meet a nice guy in Chattanooga, someone she can trust. At the Oak Street Roast during Welcome Week, she meets Shawn. They have a lot in common and immediately hit it off. Soon, Erica and Shawn are spending as much time in each other's dorms as in their own.

About halfway through the semester, Shawn begins work on a group project for his psychology class. Shawn's professor assigned him to work with Whitney and Jared, and Shawn is excited about his group because he has been sitting by Jared in class and he knows Whitney from high school. The project is 30% of the course grade, so Shawn spends a lot of time working on the project and meets with Whitney and Jared outside of class.

As Shawn spends more and more time with Whitney and Jared, Erica starts to feel jealous. One night at the library, Shawn leaves his laptop open while he goes to grab a coke, and Erica reads his Facebook messages from Whitney. Even though the messages are about class, Erica gets very upset because she thinks there is more than just friendship developing between the two of them. When Shawn gets back, she confronts him with an ultimatum: stop talking to Whitney or their relationship is over.

Questions for Discussion

1. What are some questions you have about this scenario?
2. From Erika's point of view, what is the problem?
3. What might others (Shawn or Whitney) see as the problem?
4. What assumptions has Erika made? What about Shawn or Whitney?
5. What are some possible ways to resolve the situation? What information is most important in resolving this issue? What is irrelevant?

UTC Freshman Orientation
Case Study 2
(Alcohol Scenario)

Jackson has been friends with Bradley since 7th grade, so when they both get accepted to UTC, they decide to room together. On move-in day, they meet Cameron and Micah, their other two roommates, and make friends easily. The four guys go to dinner together and have epic video game fights during their first week on campus.

On Saturday night, Cameron and Micah go out to a party and come back pretty messed up, but they sleep it off and don't really bother Jackson. The next week, they hang out with some guys from down the hall who end up getting some beer and bringing it back to the room. Jackson and Bradley don't drink, so they go shoot some pool. When they get back, all the guys are gone. The next night, a Thursday, Jackson is working on his first big English assignment around 11 when Bradley comes in with Cameron, Micah, and a few other guys. They play Call of Duty and listen to music for hours, keeping Jackson from focusing on his assignment. The next Monday night, Cameron has a bunch of people over to party. Jackson tries to keep working, but finally decides to go to the library. On his way out, he sees Bradley loading beer into their fridge and drinking.

Jackson is mad because he doesn't want to get into trouble. Deonte, the RA (Resident Assistant) on their hall, had warned them about the noise the week before, but hasn't seemed too interested in enforcing UTC's alcohol policies. Still, Jackson knows they could all get busted. When Jackson gets home that night, Bradley has passed out in his bed. Jackson does not want to get his friends in trouble but can't see how he can live with them under these circumstances.

Questions for Discussion

1. What are some questions you have about this scenario?
2. From Jackson's point of view, what is the problem?
3. What might others (Bradley, Cameron, Deonte) see as the problem?
4. What assumptions has Jackson made? What about Micah or Cameron?
5. What are some possible ways to resolve the situation? What information is most important in resolving this issue? What is irrelevant?

Freshman Orientation

QEP Critical Thinking Session

Objective: To introduce critical thinking and problem solving concepts to incoming students, to ease the transition to college, to foster a community of learning among incoming students, and to create an expectation of academic rigor to prepare incoming students for university study.

Specifically, students will:

- Explore what it means to think critically, be creative in their problem-solving, and apply basic analytic reasoning skills;
- Participate as a member of an academic community;
- Engage in reflection and dialogue;
- Consider multiple perspectives to a problem or issue;
- Participate in a shared experience with other students;
- Model intellectual engagement that is expected in college work.

Schedule: Please arrive at 8:45 am on your designated day(s). There will be four groups of freshmen rotating though your 40-minute session as follows:

9:15-9:55 – QEP Session 1
9:55-10:00 – Counseling Center Presentation
10:00-10:15 – Transition to next group

10:15-10:55 – QEP Session 2
10:55-11:00 – Counseling Center Presentation
11:00-11:15 – Transition to next group

11:15-11:55 – QEP Session 3
11:55-12:00 – Counseling Center Presentation
12:00-12:15 – Transition to next group

12:15-12:55 – QEP Session 4
12:55-1:00 – Counseling Center Presentation
1:00-1:30 – Lunch and Debriefing (Dawn)

Content: We will provide copies of the Freshman Orientation Case Study for you to distribute to the students in your groups. There will be 25 students/group.

QEP Session Itinerary

5 minutes	Introduce yourself and the other faculty person on your team to the students. Tell the students that you are there to introduce them to the concept of creative and critical thinking in a University setting. Tell them the following: *As UTC students, you will engage in creative and critical thinking both in the classroom and outside the classroom throughout your college experience. In the classroom, faculty will use techniques and activities to promote student critical thinking. Outside the classroom, you will have the opportunity to engage in on-campus and community-based activities such as internships, field trips, and events that will help you develop creative and critical thinking skills.* *Today, we want to introduce you to the concept of creative and critical thinking, so that you can start to understand how to problem-solve at the college level. We are going to do this by engaging in a discussion about a case study.*
5 minutes	Pass out the case study handouts and ask them to read.
20 minutes	Once the students have read the case study, lead them through a discussion using the questions at the end of the case. Have them think-pair-share (5 minutes), then have a group discussion (15 minutes). It is important that they have time to reflect on the questions and their responses, and have the opportunity to write down responses (either individually or as part of a group). Make sure everyone's involved.
5 minutes	Wrap-up with the students by summarizing what steps they took to address the questions posed in the case study. Read them the QEP definition of critical thinking: *Critical thinking is the habitual practice of raising questions, identifying problems, analyzing existing information, creating innovative solutions, and reflecting on the process and the produce as a means of constant improvement.* Talk about the Perry Model (if there is time) – see handout Emphasize to them they have taken the first steps in becoming critical thinkers at UTC.
5 minutes	Pass out the student post-test and survey. Collect them when they are finished and place in envelope provided.

Steps for Better Thinking Rubric

Steps for Better Thinking ↓ SKILLS ↓	←Less Complex Performance Patterns			More Complex Performance Patterns→	
	"Confused Fact Finder" Performance Pattern 0—How performance might appear when Step 1, 2, 3, and 4 skills are weak	**"Biased Jumper" Performance Pattern 1—How performance might appear when Step 1 skills are adequate, but Step 2, 3, and 4 skills are weak**	**"Perpetual Analyzer" Performance Pattern 2—How performance might appear when Step 1 and 2 skills are adequate, but Step 3 and 4 skills are weak**	**"Pragmatic Performer" Performance Pattern 3—How performance might appear when Step 1, 2, and 3 skills are adequate, but Step 4 skills are weak**	**"Strategic Re-Visioner" Performance Pattern 4—How performance might appear when one has strong Step 1, 2, 3, and 4 skills**
Step 1: IDENTIFY A—Identify and use relevant information B—Articulate uncertainties	A0—Uses very limited information; primarily "facts," definitions, or expert opinions B0—Either denies uncertainty OR attributes uncertainty to temporary lack of information or to own lack of knowledge	A1—Uses limited information, primarily evidence and information supporting own conclusion* B1—Identifies at least one reason for significant and enduring uncertainty*	A2—Uses a range of carefully evaluated, relevant information B2—Articulates complexities related to uncertainties and the relationships among different sources of uncertainty	A3—Uses a range of carefully evaluated, relevant information, including alternative criteria for judging among solutions B3—Exhibits complex awareness of relative importance of different sources of uncertainties	A4—Same as A3 PLUS includes viable strategies for GENERATING new information to address limitations B4—Exhibits complex awareness of ways to minimize uncertainties in coherent, on-going process of inquiry
Step 2: EXPLORE C—Integrate multiple perspectives and clarify assumptions D—Qualitatively interpret information and create a meaningful organization	C0—Portrays perspectives and information dichotomously, e.g., right/wrong, good/bad, smart/stupid D0—Does not acknowledge interpretation of information; uses contradictory or illogical arguments; lacks organization	C1—Acknowledges more than one potential solution, approach, or viewpoint; does not acknowledge own assumptions or biases D1—Interprets information superficially as either supporting or not supporting a point of view; ignores relevant information that disagrees with own position; fails to sufficiently break down the problem	C2—Interprets information from multiple viewpoints; identifies and evaluates assumptions; attempts to control own biases* D2—Objectively analyzes quality of information; Organizes information and concepts into viable framework for exploring realistic complexities of the problem*	C3—Evaluates information using general principles that allow comparisons across viewpoints; adequately justifies assumptions D3—Focuses analyses on the most important information based on reasonable assumptions about relative importance; organizes information using criteria that apply across different viewpoints and allow for qualitative comparisons	C4—Same as C3 PLUS argues convincingly using a complex, coherent discussion of own perspective, including strengths and limitations D4—Same as D3 PLUS systematically reinterprets evidence as new information is generated over time OR describes process that could be used to systematically reinterpret evidence
Step 3: PRIORITIZE E—Use guidelines or principles to judge objectively across the various options F—Implement and communicate conclusions for the setting and audience	E0—Fails to reason logically from evidence to conclusions; relies primary on unexamined prior beliefs, clichés, or an expert opinion F0—Creates illogical implementation plan; uses poor or inconsistent communication; does not appear to recognize existence of an audience	E1—Provides little evaluation of alternatives; offers partially reasoned conclusions; uses superficially understood evidence and information in support of beliefs F1—Fails to adequately address alternative viewpoints in implementation plans and communications; provides insufficient information or motivation for audience to adequately understand alternatives and complexity	E2—Uses evidence to reason logically within a given perspective, but unable to establish criteria that apply across alternatives to reach a well-founded conclusion OR unable to reach a conclusion in light of reasonable alternatives and/or uncertainties F2—Establishes overly complicated implementation plans OR delays implementation process in search of additional information; provides audience with too much information (unable to adequately prioritize)	E3—Uses well-founded, overarching guidelines or principles to objectively compare and choose among alternative solutions; provides reasonable and substantive justification for assumptions and choices in light of other options* F3—Focuses on pragmatic issues in implementation plans; provides appropriate information and motivation, prioritized for the setting and audience*	E4—Articulates how a systematic process of critical inquiry was used to build solution; identifies how analysis and criteria can be refined, leading to better solutions or greater confidence over time F4—Implementation plans address current as well as long-term issues; provides appropriate information and motivation, prioritized for the setting and audience, to engage others over time
Step 4: ENVISION G—Acknowledge and monitor solution limitations through next steps H—Overall approach to the problem	G0—Does not acknowledge significant limitations beyond temporary uncertainty; next steps articulated as finding the "right" answer (often by experts) H0—Proceeds as if goal is to find the single, "correct" answer	G1—Acknowledges at least one limitation or reason for significant and enduring uncertainty; if prompted, next steps generally address gathering more information H1—Proceeds as if goal is to stack up evidence and information to support own conclusion	G2—Articulates connections among underlying contributors to limitations; articulates next steps as gathering more information and looking at problem more complexly and/or thoroughly H2—Proceeds as if goal is to establish an unbiased, balanced view of evidence and information from different points of view	G3—Adequately describes relative importance of solution limitations when compared to other viable options; next steps pragmatic with focus on efficiently GATHERING more information to address significant limitations over time H3—Proceeds as if goal is to come to a well-founded conclusion based on objective consideration of priorities across viable alternatives	G4—Identifies limitations as in G3; as next steps, suggests viable processes for strategically GENERATING new information to aid in addressing significant limitations over time* H4—Proceeds as if goal is to strategically construct knowledge, to move toward better conclusions or greater confidence in conclusions as the problem is addressed over time*

* Shaded cells most closely related to "stair step" model. Performance descriptions to the left of a shaded cell characterize skill weaknesses. Performance descriptions to the right of a shaded cell characterize skill strengths.

PERRY'S MODEL

Perry's model of cognitive development will help you learn more about the learning process. William Perry claimed that individuals went through four stages of development during their college years.

Stage 1 is called the Dualism stage because students tend to divide the world into right/wrong, true/false good/bad dichotomies. Students view the teacher as right and that the student's role is to give the teacher back what they have received. They are frustrated when asked to listen to other students' opinions (since they are likely to be wrong) and content when the teacher is clear and comfortable in lectures and assignments.

Stage 2 is called the Multiplicity stage because students have come to realize that other than a few dualistic areas, most knowledge is a matter of opinion and, therefore, any opinion is knowledgeable. The student's role is to offer their ideas. They are frustrated when they find that requirements restrict them and happy when allowed to express themselves.

Stage 3 is called the Contextual Relativism stage. Students recognize that there are disciplinary guidelines for choosing among various opinions. They accept that it is the student's role to apply the skills and knowledge base of the academic field. They are frustrated when arbitrary opinions seem to rule and content when they have the information they need to use to form a solid judgment.

Stage 4 is called the Commitment within Contextual Relativism stage. In it, students connect their disciplinary skills to new settings and see the need to apply knowledge and skills to settings outside the classroom. They are frustrated by activities that cover content without knowing relevant applications and happy when allowed to apply ideas to everyday problems.

From: http://www.julianhermida.com/algoma/law1studyperry.htm

New Student Orientation Critical Thinking Sessions 2012

Critical Thinking Session	Date	# Sessions	# Students	% Students
Critical Thinking Sessions Day 1	6/08/12	24	316	13.8
Critical Thinking Sessions Day 2	6/12/12	24	322	14.0
Critical Thinking Sessions Day 3	6/19/12	24	322	14.0
Critical Thinking Sessions Day 4	6/22/12	24	327	14.3
Critical Thinking Sessions Day 5	7/13/12	24	337	14.7
Critical Thinking Sessions Day 6	7/17/12	24	340	14.8
Critical Thinking Sessions Day 7	7/27/12	24	328	14.3
Total		**168**	**2,292**	**100**

Appendix C

Faculty and Staff Development

Documents and Data

Grayson H. Walker Center for teaching and learning
401 Hunter Hall, Dept 4354
615 McCallie Avenue
Chattanooga, TN 37403

- (423) 425-4188

(423) 425-4025 fax
TRC@utc.edu

- Monday-Friday, 8:00 am—5:00 pm

We offer:

⇒ Seminars on teaching and learning

⇒ Collection of materials on teaching, learning, and technology

⇒ New faculty and adjunct orientation programs

⇒ Faculty technology training

⇒ Classroom observation

⇒ Individual, small group, and departmental consultation

TEACHING THROUGH DISCUSSION TIPS AND TECHNIQUES

Spring 2012

The Dreaded discussion

Class discussion can be an effective tool for teaching and learning, and requires planning by both the instructor and students. Instructors should identify their goals for discussion, prepare students with guidelines, and plan the discussion activity based on the goals, class size, and class format (online or in the classroom).

Why discussion? Discussion may be used to improve student learning and understanding of a concept or issue. Through listening to other students, a student may gain an appreciation for the diversity of perspectives on an issue. The act of discussion can improve student self-esteem and public speaking skills, which are critical to the work environment.

Types of Discussion. There are a number of discussion techniques that encourage students to think critically about an issue or concept, document their thinking, and report back:

Think—Pair—Share: A question or issue is posed to the class, and students pair off to discuss for a few moments, then the instructor calls on pairs to share with the class.

Small Group: Similar to above, but students are in groups of 3 to 4. The benefits of a slightly larger group is that students are exposed to more perspectives on the issue.

Chalk Talk. A question is written on the board. After a few moments of silence, students are asked to write responses on the board. They may respond to other students and may also ask questions. This type of discussion may help shy students to participate.

Student leader discussions. Student leaders are selected beforehand to facilitate small groups. By the end of the semester, each person has served in the leadership role.

Online Discussion. This can be part of an online course or a face-to-face course. A set of questions or issue is posed and students respond in a discussion board. They must also respond to other students.

Clickers. Clickers can be used to start discussion. For example, the instructor can take a poll on an issue, and use data as a lead-in to discussion.
(continued on back)

Discussion Groundrules

Providing discussion ground rules or guidelines is helpful to set the stage for a fruitful discussion. The instructor can develop the rules by his or herself, or can include students in developing them. If students are involved, this gives them buy-in and they are more likely to help you enforce the rules. Some examples of discussion guidelines are as follows:

- Be courteous
- Listen
- Speak clearly and loudly
- Stick to the subject
- Be credible
- Build upon what others say
- Do not interrupt
- Participate but do not dominate

Dreaded discussion

Discussion Content. Discussion can involve questions or issues posed in advance or the day of the discussion. Make sure the content is tied to course objectives.

⇒ *Reading Questions:* Structured reading questions can help foster reading outside of class and active learning in the classroom. Reading questions that encourage higher order thinking skills are helpful in preparing students for discussion.

⇒ *Current Events:* Ask students to locate news articles about current events related to your course objectives. Students turn them in at the beginning of class, and the instructor chooses one for the next discussion session.

⇒ *Scenarios or Cases:* Present discussion material as a problem to be solved through a scenario or case study. Encourage small groups to consider multiple solutions and ask them to decide on the "best" solution that they report back to the class.

Facilitator Techniques. There are techniques that the instructor can implement to help engage students and put them at ease during discussion sessions.

⇒ *Just Pause:* If you are having trouble getting students to respond to a question, just pause. Often, instructors do not wait long enough after posing a question. If the questions are not given to students in advance, you need to give them time to think about the question and compose an answer. Depending on how complicated the question, students may need up to three minutes.

⇒ *Ask for Silence:* If you have a few students that tend to dominate the discussion, ask for a silent period. Pose your question, say there will be a silent period for x number of minutes, and then open the floor for responses. This gives other students the time they need to formulate their responses.

⇒ *Encourage Participation:* Despite our best efforts, some students will not participate in discussion. To encourage them, create a comfortable environment by showing signs of approval and interest. When students volunteer, call them by name. Encourage them to elaborate on their answers.

⇒ *Avoid binaries.* When discussing a controversial subject, avoid binaries when possible (only two sides to an issue). Emphasize that there are multiple perspectives on an issue. Also, use the words of others to guide discussion, such as a quote from the news or the textbook.

Discussion Assessment. Discussions should be assessed by both the student and instructor. It is important for the instructor to know if the discussions are beneficial to students and how they might be improved. One way to do this is to ask some assessment questions and request that students write responses anonymously on a notecard to turn in.

To grade students on their participation in discussions, an instructor may simply note who is participating and who is not participating. A more structured means of assessment is using a rubric which provides a framework to grade students based on their quality of participation. You can also ask student to rate themselves on participation to encourage them to think about their participation.

ONLINE DISCUSSION TIPS

Online discussion is usually asynchronous which gives students the opportunity to put more thought into their responses. Sometimes, students says things in a discussion board that could be conceived as inconsiderate or unprofessional. It's important for students to know that they shouldn't put anything in a written discussion post that they would not say during a face-to-face class discussion. Here are some more tips:

- Require that students post their original/initial discussion post by a certain deadline followed by response posts a few days later.
- Provide students with a rubric that outlines
- Engage in the discussion with the students, but it's not necessary to respond to each student in every discussion board.
- Integrate use of the literature in their postings. Through this process, students learn how to find peer-reviewed articles and gain experience in using the literature to support major points. In requiring a citation, students practice citing sources in the proper format.

THE UNIVERSITY of TENNESSEE CHATTANOOGA

ThinkAchieve

Distinguished Guest Speaker on Critical Thinking

April 5th, 2012 Workshops

Bill Roberson, Ph.D.
Director, Institute for Teaching, Learning, and Academic Leadership
University at Albany

10:00 - 11:30 AM Thinking Critically about the Teaching of Critical Thinking Workshop

Are we really successful at teaching critical thinking? How do we move from talking about critical thinking to doing it in the classroom? This workshop serves as an introduction to the challenges of inducing students to think more rigorously, systematically, and reflectively both within and across disciplines. Participants will step into the role of critical thinking learners, in order to experience and reflect upon the precise structures and formats of university teaching that induce students to think. **To register, click here**.

2:00 - 3:30 PM Team-Based Learning Workshop

It's not what you think. We've come a long way since we started putting students into groups for cooperative or collaborative learning. Team-based learning (TBL) is a more comprehensive, systematic approach to course design and organization that (1) puts a premium on assessment of individual student preparation outside of class, (2) puts students into roles of greater responsibility for their learning, and (3) holds students accountable for their work both as individuals and as members of a group. This method, developed by Larry K. Michaelsen, is effective in all disciplines and in classes of all sizes. In this workshop, participants will experience specific TBL practices, and experience the dynamic unique to the TBL classroom. **To register, click here.**

Speaker Biography:

Since entering academe in 1987, first as a faculty member, then as an administrator, and later as a faculty development professional, Bill Roberson has been in pursuit of teaching excellence—for individual faculty members, for academic programs, for institutions, and for himself. Since 1992 this pursuit has been the focal point of his professional activity and practice in curricular and instructional innovation. His primary area of interest is the design of courses, activities and assignments that ensure intellectual engagement of students and the development of their ability to think critically. To do this, he draws on examples from science, humanities, social science as well as professional fields, to show the transferability and universality of key cognitive structures and processes that shape learning and teaching. Foremost, he is an advocate for transforming the way we define and structure learning experiences for novices in our disciplines. His public workshops and seminars ask participants to assume the role of learners in unfamiliar contexts, and experience the excitement of challenges that foster an authentic engagement with new ideas.

Bill Roberson's career in university faculty development programs includes earlier positions at UNC-Chapel Hill and Indiana University. More recently he served as Director of the Center for Effective Teaching and Learning at the University of Texas-El Paso, where he was also founding executive director of that university's division of Instructional Support Services for instructional technology, classroom design, digital media production and distance learning. He came to New York in 2006 to create the Institute for Teaching, Learning, and Academic Leadership at the University at Albany, State University of New York (**http://albany.edu/teachingandlearning**).

THE UNIVERSITY of TENNESSEE CHATTANOOGA

ThinkAchieve

Think Achieve

Instructional Excellence Retreat

Friday, May 4th, 8:30 am to 4:00 pm
Chattanooga Rooms, University Center

Speaker reception following at Mayor's Mansion

Critical Thinking Workshops by Ed Nuhfer, Ph.D.

Click here to register

Promoting Deep Learning and Critical Thinking through Fractal Awareness

What is critical thinking and what is deep learning? What do they have to do with each other? Join us for a day-long retreat to consider deep learning, deep feeling, helping students to construct their own learning through interactive engagement and improved metacognition. Presented by Ed Nuhfer, Director of Faculty Development and Professor of Geology at the California State University Channel Islands.

8:30 - 9:00	Coffee and Registration
9:00 - 12:00	Introspective reflection on doing what we most want to do
	The connection between deep thinking and deep feeling - The affective domain breaking the tradition of teaching to half a brain
	Developmental models and neural networks - What constructing our own learning really means
12:00 - 1:00	Lunch (provided)
1:00 - 4:00	Interactive engagements: Building a toolbox for many occasions
4:30 - 6:30	Employing "Learning across the Curriculum" to produce deep learning through metacognition Speaker Reception at the Mayor's Mansion ***If you are unable to attend the retreat, but would still like a copy of the materials, please email Dawn-Ford@utc.edu***

Edward B. Nuhfer, Ph.D. is the Director of Faculty Development and Professor of Geology at the California State University Channel Islands. He has been a regular columnist for the National Teaching and Learning Forum for over ten years and has published over forty articles on how the fractal nature of brain neurology informs the endeavors of college level thinking and teaching. He founded student management teams, knowledge surveys, learning-across-the-curriculum modules, led a team to construct the Science Literacy Concept Inventory and validate it with several thousand students, and recently to use it as a means to diagnose students' skills in self-assessment. Ed received the POD Innovation Award in 2006 and was an Innovation Award Finalist in 2008. His professional interests are in faculty development, science education, and producing higher level thinking and conceptual reasoning in college students.

Ed received his doctorate in geology from the University of New Mexico in 1980, and MS from West Virginia University. He has over 150 publications including The Citizens' Guide to Geologic Hazards which obtained an "Outstanding Academic Book" award in 1995 from the Association of College and Research Libraries. His work experience includes employment in industry (Chevron Oil Company) government (WV Geological Survey and the U.S. Geological Survey) and college teaching (Marietta College, University of Wisconsin at Platteville the University of Colorado at Denver, Idaho State University and CSU Channel Islands). He was awarded three separate presidential certificates of merit by the American Institute of Professional Geologists (1983, 1988, 1993), served as their national Editor (1987-1988) and in 1995 received the John T. Galy Sr. Public Service Award from that same organization.

Contact Information: ed.nuhfer@csuci, phone 208 241 5029, campus residence Apt 33, 150 Cathedral Cove Camarillo, CA 93012

For more information about the Instructional Excellence Retreat, email **Dawn Ford**. If you require accomodations for this event, please contact the Walker Center for Teaching and Learning at 425-4188 prior to the event. You can also contact the Office for Students with Disabilities at 425-4006 (V/TTY) or osd@utc.edu.

Faculty Learning Community, Spring 2012

Hiwassee Room, University Center

February 14th, 2012, 3:00 – 4:00 PM

I. Critical Thinking Assessment Test Results (Fall 2011, Freshmen)

II. Wolcott Chapters 1 & 2 -- Discussion of course objectives (bring a syllabus or two)

III. QEP Syllabus Statement Discussion

IV. ThinkAchieve Development Grants

V. Upcoming critical thinking workshops
   a. Webinar Series

   b. Bill Roberson, University of Albany
      April 5th

   c. Ed Nuhfer, California State University
      Instructional Excellence Retreat
      May 4th

Critical Thinking Seminars 2011-2012

Seminar Topic	Date	# Hours	# Attendees	# Contact Hours
Teaching Strategies for Critical Thinking	9/15/11	1.5	0	0
Critical Thinking Overview	9/22/11	1	13	13
Critical Thinking Overview	9/26/11	1	9	9
Critical Thinking Overview	9/28/11	1	12	12
Teaching Strategies for Critical Thinking	10/5/11	1	1	1
Teaching Strategies for Critical Thinking	11/2/11	1.5	0	0
The Dreaded Discussion	1/26/12	1	2	2
The Dreaded Discussion	2/3/12	1	3	3
The Dreaded Discussion	2/7/12	1	1	1
The Dreaded Discussion (online)	2/13/12	1	0	0
Asking Questions the Right Way	2/23/12	1	1	1
Asking Questions the Right Way	3/2/12	1	0	0
Asking Questions the Right Way	3/6/12	1	3	3
Asking Questions the Right Way (online)	3/7/12	1	0	0
Critical Thinking Seminar	3/19/12	1.5	4	6
Getting Student Feedback	3/20/12	1	0	0
Getting Student Feedback	3/22/12	1	0	0
Getting Student Feedback	3/28/12	1	2	2
Getting Student Feedback (online)	3/30/12	1	0	0
Total		**20.5**	**51**	**53**

Critical Thinking Webinars 2011-2012

Webinar Topic	Date	# Hours	# Attendees	# Contact Hours
Reflective Judgment	2/15/12	1.5	11	16.5
Designing Effective Multiple Choice Tests	2/22/12	1.5	14	21
Metacognition	3/8/12	1.5	11	16.5
ePortfolios	3/21/12	1.5	14	21
Total		**6**	**50**	**75**

Critical Thinking Workshops/Retreats 2011-2012

Workshop/Retreat Topic	Date	# Hours	# Attendees	# Contact Hours
GenEducation/Critical Thinking Retreat	9/10/11	4.5	46	207
Teaching Critical Thinking Workshop	4/5/12	1.5	21	31.5
Team-Based Learning Workshop	4/5/12	1.5	21	31.5
Educating in Fractal Patterns Retreat	5/4/12	6	60	360
Total		**13.5**	**148**	**630**

Critical Thinking Book Clubs 2011-2012

Assigned Reading	Date	# Hours	# Attendees	# Contact Hours
How Learning Works	9/8/11	1.25	2	2.5
How Learning Works	9/9/11	1	7	7
Academically Adrift	9/22/11	1	4	4
How Learning Works	9/23/11	1.25	4	5
How Learning Works	10/6/11	1.25	3	3.75
Academically Adrift	10/7/11	1	1	1
Academically Adrift	10/13/11	1	4	4
How Learning Works	10/20/11	1	2	2
How Learning Works	10/21/11	1	4	4
Academically Adrift	11/3/11	1	3	3
Academically Adrift	11/4/11	1	2	2
How Learning Works	11/10/11	1	2	2
How Learning Works	11/11/11	1	4	4
Academically Adrift	11/17/11	1	3	3
Academically Adrift	11/18/11	1	2	2
Making Thinking Visible	1/27/12	1	6	6
Making Thinking Visible	2/17/12	1	5	5
Making Thinking Visible	3/23/12	1	3	3
Making Thinking Visible	4/13/12	1.5	3	4.5
Total		**20.25**	***64**	**67.75**

*Five groups of varying sizes, with a total of 64 attendees across sessions

Faculty Learning Communities 2012

FLC Topic	Date	# Hours	# Attendees	# Contact Hours
Critical Thinking in the Classroom	1/26/12	1	7	7
Critical Thinking in the Classroom	2/14/12	1	9	9
Critical Thinking in the Classroom	3/6/12	1.25	5	6.25
Critical Thinking in the Classroom	4/24/12	1	6	6
Total		**4.25**	***27**	**28.25**

*Core group of 9, with a total of 27 attendees across sessions

Faculty/Adjunct Orientation 2011-2012

QEP Overview Sessions	Date	# Hours	# Attendees	# Contact Hours
Faculty: Critical Thinking & the QEP	8/11/11	.75	22	16.5
Faculty: Critical Thinking & the QEP	8/9/12	.75	40	30
Adjunct: Critical Thinking & the QEP	8/16/12	.25	20	5
Adjunct: Critical Thinking & the QEP	8/20/12	.25	6	1.5
Total		**2**	**88**	**53**

Freshmen Orientation Training/Facilitation Summer 2012

Critical Thinking Exercise	Date	# Hours	# Attendees	# Contact Hours
Faculty Training	5/15/12	1	6	6
Faculty Training	5/16/12	1	4	4
Critical Thinking Exercise – Day 1	6/8/12	4.5	8	36
Critical Thinking Exercise – Day 2	6/12/12	4.5	7	31.5
Critical Thinking Exercise – Day 3	6/19/12	4.5	6	27
Critical Thinking Exercise – Day 4	6/22/12	4	6	24
Critical Thinking Exercise – Day 5	7/13/12	4	6	24
Critical Thinking Exercise – Day 6	7/17/12	4	6	24
Critical Thinking Exercise – Day 7	7/27/12	4	6	24
Total		**31.5**	**55**	**200.5**

Faculty and Staff Orientation Facilitators Summer 2012

Facilitator	Department	# Days Participated	# Sessions Facilitated
Johnna Bell	English	4	16
Jane Brower	Education	2	8
Sara Coffman	English	5	20
James Corkern	English	4	12
Ralph Covino	History	2	8
Jamie Harvey	Health and Human Performance	3	12
Linda Johnston	Education	2	8
Madonna Kemp	English	3	12
Jen Litton	English	3	12
Karen McGuffee	Criminal Justice	5	20
Susan North	English	4	16
Verbie Provost	English	2	8
Cheryl Robinson	Education	1	4
Joanie Sompayrac	Accounting	3	12
Megan Spooner	English	3	12

CAT Train-the-Trainer Sessions 2011-2012

Train-the-Trainer Sessions	Date	# Hours	# Attendees	# Contact Hours
CAT Train-the-Trainer, San Francisco	March 2011	16	2	32
CAT Train-the-Trainer, Charleston	August 2011	16	3	48
CAT Train-the-Trainer, Boston	November 2011	16	1	16
CAT Train-the-Trainer, Boulder	March 2012	16	2	32
Total		**64**	**8**	**128**

UTC Approved CAT Trainers 2011-2012

Approved Trainers*	Title/Department	Training Date	Training Location
Karen Adsit	Dean, Lifelong Learning Director, Walker Center for Teaching and Learning	Mar 2011	San Francisco
Fran Bender	Assistant Provost Student Retention and Success	Mar 2011	San Francisco
Lorraine Evans	Assistant Professor Sociology	Aug 2011	Charleston
Dick Gruetzemacher	Director Planning, Evaluation and Institutional Research	Aug 2011	Charleston
Linda Johnston	Associate Professor Teacher Preparation Academy	Aug 2011	Charleston
Cynthia Taylor	Assessment Coordinator Planning, Evaluation and Institutional Research	Nov 2011	Boston
Dawn Ford	Faculty Developer, Assistant Director Walker Center for Teaching and Learning	Mar 2012	Boulder
Kathleen Wheatley	Associate Professor Business Management	Mar 2012	Boulder

*Employees completed CAT Train-the-Trainer and are approved to train UTC employees how to grade the CAT

CAT Training/Grading Sessions 2011-2012

Training/Grading Sessions	Date	# Hours	# Attendees	# Contact Hours
CAT Training/Grading Summer 2011	7/27/11	7	11	77
CAT Training/Grading Fall 2011	12/12/11	6.5	24	156
CAT Training/Grading Spring 2012	5/1/12	7	24	168
Total		**20.5**	**59**	**401**

Faculty and Staff CAT Graders 2011-2012

Fall Graders	Department	College/Unit
Deborah Arfken	University Planning	Administration
Dawn Ford	Walker Center for Teaching and Learning	Administration
Victoria Steinberg	Foreign Languages and Literatures	Arts and Sciences
Gregory O'Dea	UHON, English	Arts and Sciences
Tony Steinhoff	History	Arts and Sciences
Verbie Prevost	English	Arts and Sciences
Ann Holmes	Geology	Arts and Sciences
Matthew Guy	English	Arts and Sciences
Tammy Garland	Criminal Justice	Arts and Sciences
Rebecca Jones	English	Arts and Sciences
Aaron Shaheen	English	Arts and Sciences
Jose Barbosa	Biological and Environmental Sciences	Arts and Sciences
Ralph Covino	History	Arts and Sciences
Thomas Balazs	English	Arts and Sciences
Libby Byers	Psychology	Arts and Sciences
Richard Apgar	Foreign Languages and Literatures	Arts and Sciences
Joanie Sompayrac	Accounting	College of Business
Stan Davis	Business	College of Business
William Evans	Business	College of Business
Cecelia Wigal	Engineering	Engineering and Computer Science
Jackie Thompson	Computer Science	Engineering and Computer Science
Barbara Norwood	School of Nursing	Health, Education and Professional Studies
Valerie Rutledge	School of Education	Health, Education and Professional Studies
Jamie Harvey	Health and Human Performance	Health, Education and Professional Studies
Spring Graders	**Department**	**College/Unit**
Susan Ritz	University Planning	Administration
Bengt Carlson	Student Retention and Success	Administration
Michelle Rigler	Office for Disabilities	Administration
Betsy Darken	Mathematics	Arts and Sciences
Jose Barbosa	Biological and Environmental Sciences	Arts and Sciences
Linda Collins	Biological and Environmental Sciences	Arts and Sciences
Ralph Covino	History	Arts and Sciences
Richard Apgar	Foreign Languages and Literatures	Arts and Sciences
Megan Spooner	English	Arts and Sciences
Victoria Steinberg	Foreign Languages and Literatures	Arts and Sciences
Amye Warren	Psychology	Arts and Sciences
Cindy White	Business	College of Business
William Evans	Business	College of Business
Chris Levan	Business	College of Business
Christi Wann	Business	College of Business
Kathleen Wheatley	Business	College of Business
Paula Collier	Health and Human Performance	Health, Education and Professional Studies
Amy Doolittle	Social Work	Health, Education and Professional Studies
Martina Harris	School of Nursing	Health, Education and Professional Studies
Linda Johnston	School of Education	Health, Education and Professional Studies
Darrell Meece	School of Education	Health, Education and Professional Studies
Cheryl Robinson	School of Education	Health, Education and Professional Studies
Bonnie Warren-Kring	School of Education	Health, Education and Professional Studies

Total Faculty and Staff Development Participation 2011-2012

Development Activities	# Hours	# Attendees	# Contact Hours
Seminars	20.5	51	53
Webinars	6	50	75
Workshops/Retreats	13.5	148	630
Book Clubs	20.25	64	67.75
Faculty Learning Communities	4.25	27	28.25
Faculty/Adjunct Orientation	2	88	53
Freshmen Orientation Training/Facilitation	31.5	55	200.5
CAT Train-the-Trainer Sessions	64	8	128
CAT Grading Sessions	20.5	59	401
Total	**182.5**	**550**	**1,636.50**

Faculty and Staff Development Activity Evaluations 2012

Level of Agreement to Statements	TCT Mean (n=20)	TBL Mean (n=19)	IER Mean (n=34)	CGS Mean (n=23)
I have learned something valuable from this [session].	4.85	4.84	4.47	4.57
This [session] was a good use of my time.	4.85	4.89	4.38	4.52
I feel more informed as a result of this [session].	4.85	4.84	4.41	4.43
The [session] content is relevant to UTC's campus.	4.95	4.79	4.53	4.61
I feel confident to use what I've learned in my job at UTC.	4.42	4.56	4.21	4.35
I will continue to educate myself about this [session] topic.	4.75	4.58	4.41	4.74
I will use something I've learned in my job at UTC.	4.80	4.74	4.45	4.52
The instructional format of this [session] was effective.	4.80	4.79	4.15	4.36

1=Strongly Disagree, 2=Disagree, 3=Neither Agree or Disagree, 4=Agree, 5=Strongly Agree

TCT*=Teaching Critical Thinking Workshop &* ***TBL****=Team-Based Learning Workshop, Dr. Bill Roberson, 4/5/12*
IER*=Instructional Excellence Retreat, Dr. Ed Nuhfer, 5/4/12,* ***CGS****=CAT Grading Session, 5/1/12*

Faculty and Staff Development Needs 2012

Development Needs (select all that apply)	Number	Percent
ThinkAchieve Seminars	39	40.6
Teaching and Learning Seminars	22	22.9
Faculty Learning Communities	17	17.7
Blackboard Training	15	15.6
Software and Hardware Training	10	10.4
Book Clubs	10	10.4
Other Training Needs	4	10.4

**Percentages are greater than 100% because participants were able to select more than one category*
N=96, participants from two workshops, instructional excellence retreat, and CAT grading session

University of Tennessee at Chattanooga

ThinkAchieve

CREATING CONNECTIONS

ThinkAchieve Development Grants -- *In the Classroom*

Introduction

The ThinkAchieve initiative was developed to close the documented gaps between student and faculty perception of higher-level thinking skills in the classroom. To work toward this goal, small grants ($1,000 maximum per award) are available through the *In the Classroom* program to fund the design, implementation, and assessment of active learning experiences in the classroom by faculty and staff to promote the meaningful transformation of courses. Awardees will demonstrate that these new experiences are linked to ThinkAchieve student learning outcomes and thus broaden the classroom experience for students.

In the Classroom is an internal grant program with guidelines established by the ThinkAchieve Development Grants Task Force. *In the Classroom* projects must have clear student learning objectives and plans for project assessment. Projects should promote students' active use of critical thinking skills as outlined in Susan Wolcott's "Steps for Better Thinking" model of problem solving and reflection. This model describes the process of problem solving through the steps of identifying, exploring, prioritizing, and envisioning (for more details on "Steps for Better Thinking," go to http://www.wolcottlynch.com/EducatorResources.html).

Eligibility and Grant Cycle

The *In the Classroom* grant program is open to individuals and small teams of UTC faculty and staff. Collaboration with other faculty members that teach the course is encouraged. All part-time and full-time faculty and staff are eligible to apply. Grant funds may be requested for: Materials and supplies, specialized software and technical support not ordinarily provided by the department, stipends for faculty who play an active role in the development, implementation, or administration of the project, or stipends to students who have a critical role in the development and execution of the project. The following items may *not* be included in the budget request: The repair of major equipment, the purchase or upgrade of standard software for which the University already has a license, and the updating of general course materials.

Applications are accepted on a rolling basis. Faculty and staff submitting a completed application will be notified within 30 days of their award status. Once awarded, funds should be spent by the end of the term of the award (fall, spring, or summer).

Program Requirements

Award recipients will be required to do the following:

- Submit a progress/fiscal report and a final report. Dates and specific requirements will be announced in the award letter.

- Present their work at a campus-wide seminar by the end of the term of their award (fall, spring, or summer). The presentation should detail the active learning activity, including assessment, and how funds were used to support it.

Selection Criteria and Process

The selection process will focus on the extent to which the proposed project demonstrates that:

1. The activity links to clear student learning outcomes related to ThinkAchieve goals.
2. The expenses detailed in the budget are integral to fostering students' learning.
3. The assessment is appropriate and purposeful. Examples of assessment include: control and experimental sections of a course, pre-test and post-test assessments within a course section.

All completed applications will be reviewed by a cross-disciplinary committee (ThinkAchieve Development Grants Task Force).

Grant Application Review Criteria and Scoring Rubric

A rubric will be used to assess proposals based on the submission instructions, and is as follows:

Criteria	0-1 point	2-3 points	3-4 points
The activity links to student learning outcomes related to ThinkAchieve goals.	No student learning outcomes are outlined, or the outcomes are not related to ThinkAchieve goals of critical and creative thinking in the classroom.	Student learning outcomes are weakly related to ThinkAchieve goals of critical and creative thinking in the classroom.	Student learning outcomes are strongly related to ThinkAchieve goals of critical and creative thinking in the classroom.
The expenses details in the budget are integral to fostering student learning.	The expenses outlined in the budget are not essential to fostering student learning. Extraneous items are listed.	Some expenses listed in the budget are integral to fostering student learning, but some items are not.	All expenses outlined in the budget are integral to fostering student learning.
The assessment is appropriate and purposeful.	No assessment is outlined, or the assessment is limited to routine student evaluation of faculty.	Assessment is outlined, but is not appropriate for the outlined project or will not produce data to properly assess if the project is meeting the outlined goals.	Assessment is outlined that is appropriate for the project and will produce data that will properly assess the project.

Submission Instructions

A completed and signed application form should be submitted through email to Dawn-Ford@utc.edu at least 30 days before the start of the proposed project. The application must be signed by both the primary applicant and their Department Head. Comments on how this activity supports the applicant's EDO should be provided by the Department Head in the space provided on the form.

University of Tennessee at Chattanooga

ThinkAchieve

CREATING CONNECTIONS

ThinkAchieve Development Grants: Beyond the Classroom

Introduction

Experiential education provides faculty and staff with the opportunity to guide students in applying what they learn in class to real-world challenges in settings beyond the classroom. It has been shown that critical and creative thinking can be developed through experiential learning, and UTC recognizes the value of these opportunities. Experiential learning experiences in the community in settings such as business, nonprofit, community service, and government encourage students to examine, apply, practice, and reflect upon critical thinking skills. In addition to service-learning opportunities, experiential education may involve study abroad, internships, and capstone and culminating experiences.

The ThinkAchieve Development Grants *Beyond the Classroom* program provides small grants ($1,500 maximum per award) to fund the design, implementation, and assessment of experiential learning opportunities by faculty and staff to promote the meaningful transformation of courses and critical thinking student learning outcomes. Awardees will demonstrate collaboration with partners to help create a more prepared workforce, a dynamic learning environment, and a stronger community.

Beyond the Classroom is an internal grant program with guidelines established by the ThinkAchieve Development Grants Task Force. *Beyond the Classroom* projects must have clear experiential student learning objectives and should meet the Standards of Practice for Experiential Education (for a full description of the standards, visit http://www.nsee.org/standards-and-practice):

- Intention
- Preparedness and Planning
- Authenticity
- Reflection
- Orientation and Training
- Monitoring and Continuous Improvement
- Assessment and Evaluation
- Acknowledgement

Eligibility and Grant Cycle

The *Beyond the Classroom* grant program is open to individuals and small teams of UTC faculty and staff. Collaboration across departments and with community partners is encouraged. All part-time and full-time faculty and staff are eligible to apply. Grant funds may be requested for: Materials and supplies, specialized software and technical support not ordinarily provided by the department, stipends for faculty who play an active role in the development, implementation, or

administration of the project, stipends for students who have a critical role in the development and execution of the project, and student travel expenses. The following items may *not* be included in the budget request: the repair of major equipment, the purchase or upgrade of standard software for which the University already has a license, and the updating of general course materials.

Applications are accepted on a rolling basis. Faculty and staff submitting a completed application electronically will be notified within 30 days of their award status. Once awarded, funds should be spent by the end of the term of your award (fall, spring, or summer).

Program Requirements

Award recipients will be required to do the following:

- Submit a progress/fiscal report and a final report. Dates and specific requirements will be announced in the award letter.
- Present their work at a campus-wide seminar by the end of the term of their award (fall, spring, or summer). The presentation should detail the experiential activity, including assessment, and how funds were used to support it.
- Submit the new activity/experience to the University for co-curricular credit approval. Approved activities allow students to earn points in the ThinkAchieve Student Awards Program. For more information about co-curricular credit, review the QEP at http://www.utc.edu/Administration/SACS/documents/FINAL_ThinkAchieve.pdf.

Selection Criteria and Process

The selection process will focus on the extent to which the proposed project demonstrates that

1. The activity has clear experiential student learning objectives and meets the Standards of Practice for Experiential Education (for a full description of the standards, visit http://www.nsee.org/standards-and-practice).
2. The expenses detailed in the budget are integral to fostering students' learning and critical thinking.
3. The assessment is appropriate and purposeful.

All completed applications will be reviewed by a cross-disciplinary committee (ThinkAchieve Development Grants Task Force).

Submission Instructions

A completed and signed application form (attached) should be submitted through email to Dawn-Ford@utc.edu at least 30 days before the proposed start of the project. The application must be signed by both the primary applicant and their Department Head. Comments about how this activity supports the applicant's EDO should be provided by the Department Head in the space provided on the form.

Grant Application Review Criteria and Scoring Rubric

A rubric will be used to assess proposals based on the submission instructions, and is as follows:

Criteria	1-2 pts	2-3 pts	3-4 pts
The activity links to student learning outcomes related to ThinkAchieve goals.	No student learning outcomes are outlined, or the outcomes are not related to ThinkAchieve goals of critical and creative thinking outside the classroom.	Student learning outcomes are weakly related to ThinkAchieve goals of critical and creative thinking outside the classroom.	Student learning outcomes are strongly related to ThinkAchieve goals of critical and creative thinking outside the classroom.
The expenses details in the budget are integral to fostering student learning.	The expenses outlined in the budget are not essential to fostering student learning. Extraneous items are listed.	Some expenses listed in the budget are integral to fostering student learning, but some items are not.	All expenses outlined in the budget are integral to fostering student learning.
The assessment is appropriate and purposeful.	No assessment is outlined, or the assessment is limited to routine student evaluation of faculty.	Assessment is outlined, but is not appropriate for the outlined project or will not produce data to properly assess if the project is meeting the outlined goals.	Assessment is outlined that is appropriate for the project and will produce data that will properly assess the project.

ThinkAchieve In-the-Classroom Grants Awarded 2012

Date	Recipient(s)	Department(s)	Title of Project	Amount
5/14/12	Leroy Fanning Phil Pugliese	Health and Human Performance	Special Topics Class: Active Living and Transportation	$1,000
5/15/12	Darrell Meece	School of Education	Open-Source Child Development Text and Wiki	$1,000
8/17/12	Amye Warren	Psychology	Improving Critical Thinking Skills in Graduate Teaching Assistants and Their Students	$916
Total	**4 Recipients**	**3 Departments**	**3 Projects**	**$2,916**

ThinkAchieve Beyond-the-Classroom Grants Awarded 2012

Date	Recipient(s)	Department(s)	Title of Project	Amount
5/14/12	Leroy Fanning Stefanie deOlloqui	Health and Human Performance	HHP-YMCA Partnership and Model Development	$1,500
5/14/12	Rebecca Jones	English	Travel Writing Course	$657
7/30/12	Catherine Smith Rebecca Littleton	Physical Therapy	Outdoor Camping Experiences for Children with Disabilities	$1,496
8/17/12	Stefanie deOlloqui Steve Underwood	Health and Human Performance	Promotion of a Bicycle Transit System: Intern Support	$1,500
8/17/12	Victoria Steinberg	Modern and Classical Languages and Literatures	Students Teach French Language and Culture at Rivermont	$666
8/17/12	Bradley Reynolds Thomas Wilson	Biological and Environmental Sciences	Building a Conservation Ethic in Non-Science Majors through Hands-On Herpetology	$1,422
8/17/12	Sarah Sloan	Health and Human Performance	Partnership Development: HHP and the Partnership for Families, Children and Adults	$1,500
Total	**11 Recipients**	**5 Departments**	**7 Projects**	**$8,741**

Appendix D

Experiential Learning Program

Documents and Data

120 Points to Graduation Award

Experiences	Point Value
Study Abroad[1]	Up to 60
Internship[2]	Up to 30
Leadership Role[3]	Up to 30
Class or Community Project[4]	Up to 15
Event[5]	3

[1] Study Abroad Experiences involve students in differing degrees of experiential learning according to the length of time, intention, and academic rigor required of students. Point values vary accordingly.
[2] Internships are classes exclusively focused on a single student's experience, and a maximum of 2 classes (60 total points) from any major will be accepted. Use Contract Form
[3] A leadership role demonstrates a significant commitment of time and energy in the development of other students or organizational members. A maximum of one leadership role may be counted from each organization in which a student participates. Use Contract Form
[4] If a class or community project involves documentable experiential learning that is supervised by a faculty, staff or community member, it may count. Use Contract Form.
[5] This is a single event that has been pre-approved for ThinkAchieve Credit. Use ThinkAchieve Scholars Experience Reflection Card.

Student-Initiated Think Achieve Experiential Learning Contract

Student Name:_____ Email _____ ID#._____

Faculty/Staff Member (only for class or campus experience):_____

Department/College:_____ Semester/Yr_____

Course title and number: _____

Organization or community entity:_____ Duration _____ (contact hours)

Address, Phone Number and email of contact person_____

Will this experience repeat in future semesters?_____Will you be paid for this experience?_____
Is this course or experience mandatory for your major?_____

Signature of Student_____ Date_____

Signature of Faculty/Staff_____ Date_____
or
Signature of Community Contact_____Date_____

Suggested Point Value_____(consult Overall Rubric for max. value in each category)

Your Faculty, Staff or Community Contact Advisor must contact the Experiential Learning Coordinator to discuss prior approval before completing this form. After the experience, the attached 'Preflection' and Reflection must be signed by your professor, staff or community supervisor, then turned into the Experiential Learning Coordinator at Campus Box 5555. The contract and point value will then be reviewed for approval by the ThinkAchieve Beyond the Classroom Committee.

Please answer the 'Preflection' questions listed on the back of this form. The Think Achieve Experiential Learning Reflection corresponding to this experience must be completed at (Website) after the experience is completed.

'Preflection'
To be turned in with initial submission of contract
Signature of Faculty/Staff/Community Contact_____Date:_____

1. Community project or experience to be completed

2. What do you think you will learn from this *Beyond the Classroom* experience?

3. What are the major questions you have about the project or experience?

4. Do you already have some working answers for these questions? If so, what are these answers?

5. Is there a specific problem you hope to address? If so, what do you think is a possible solution to this problem?

6. Will this experience enable you to interact with people whose viewpoints differ from your own? If so, how do you anticipate learning in and through these interactions?

7. Is the environment of the experience one that you are familiar with? How may this affect your learning within this environment?

Reflection-To be completed after the Contract Objectives have been completed and signed by Faculty, Staff or Community Contact

Faculty/Staff/Community Contact
Signature:_____

1. What did you learn from this *Beyond the Classroom* experience? Was this the same thing you intially thought you would learn?

2. Are the questions you asked still major questions you have about the project or experience? Do you have other questions now?

3. Were some of the answers you intially had correct? Do you have any different answers?

4. Did you adequately think through the specific problem to be addressed? Has your proposed solution to this problem remained unchanged, or do you have new solutions?

5. Did this experience enable you to interact with people whose viewpoints differ from your own? If so, how did you learn in and through these interactions?

6. If you answered "yes" to preflection #6, was your familiarity of the environment a significant influence on your learning? If so, how?

Faculty-Initiated Think Achieve Experiential Learning Contract
(To be in an Adobe, save able, printable fill in style on-line format.)

Faculty/Staff Name:_____ ID#_____

Department/College:_____ Semester/Yr_____

Course title and number: _____

Organization or community entity (if applicable):_____duration _____ (contact hours)

Name, Phone Number and Email of community contact person_____

Will this experience repeat in future semesters?_____Will students be paid for this experience?____
Is this course or experience mandatory in a major?_____

Signature of Staff/Faculty_____ Date_____
Suggested Point Value _____(Consult Point Value Table below for maximum point values)

Experiences	Point Value
Study Abroad	Up to 60 points
Internship[1]	Up to 30 points
Leadership Role [2]	Up to 30 points
Class or Community Project[3]	Up to 15 points

On separate pages attached to this form please describe the following in detail:

1. Community project or experience to be completed
2. Which of the following attributes this experience will exhibit and how

- Intention, Preparedness, Planning
- Authenticity, Orientation and Training
- Monitoring and Continuous Improvement

All completed applications will be reviewed by a cross-disciplinary committee (Think Achieve Experiential Learning Task Force), and evaluated according to how:

1) Student learning outcomes are strongly related to the Experiential Learning Attributes listed above
2) Experiences outlined are integral to fostering student learning

[1] Internships are classes exclusively focused on a single student's experience, and a maximum of 2 classes (60 total points) from any major will be accepted. Use Contract Form
[2] A leadership role is approximately one semester, and demonstrates a significant commitment of time and energy in the development of other students or organizational members. A maximum of one leadership role may be counted from each organization in which a student participates. Use Contract Form
[3] If a class or community project involves documentable experiential learning that is supervised by a faculty, staff or community member, it may count. Use Contract Form.

The Faculty or Staff member initiating contract must contact the Experiential Learning Coordinator (bengt_carlson@utc.edu, ext. 5825) to discuss approval before students sign this contract. **Participating Students must turn in 'Preflection' before and Reflection after Experience at (URL)**

Student Name:_______________________________________ Email ________ ID#.________________
Signature of Student____________________________________ Date__________________

Student Name:_______________________________________ Email ________ ID#.________________
Signature of Student____________________________________ Date__________________

Student Name:_______________________________________ Email ________ ID#.________________
Signature of Student____________________________________ Date__________________

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Student Name:_______________________________________ Email ________ ID#.________________
Signature of Student____________________________________ Date__________________

Student Name:_______________________________________ Email ________ ID#.________________
Signature of Student____________________________________ Date__________________

Student 'Preflection'
A Student's completion of this at (URL) will indicate intention to participate in the Faculty Initiated Think Achieve Contract

1. Community project or experience to be completed

2. What do you think you will learn from this *Beyond the Classroom* experience?

3. What are the major questions you have about the project or experience?

4. Do you already have some working answers for these questions? If so, what are these answers?

5. Is there a specific problem you hope to address? If so, what do you think is a possible solution to this problem?

6. Will this experience enable you to interact with people whose viewpoints differ from your own? If so, how do you anticipate learning in and through these interactions?

7. Is the environment of the experience one that you are familiar with? How may this affect your learning within this environment?

Student Reflection-To be completed after the Contract Objectives have been completed and signed by Faculty, Staff or Community Contact

Faculty/Staff/Community Contact Signature:_____

1. What did you learn from this *Beyond the Classroom* experience? Was this the same thing you intially thought you would learn?

2. Are the questions you asked still major questions you have about the project or experience? Do you have other questions now?

3. Were some of the answers you intially had correct? Do you have any different answers?

4. Did you adequately think through the specific problem to be addressed? Has your proposed solution to this problem remained unchanged, or do you have new solutions?

5. Did this experience enable you to interact with people whose viewpoints differ from your own? If so, how did you learn in and through these interactions?

6. If you answered "yes" to preflection #6, was your familiarity of the environment a significant influence on your learning? If so, how?

Think Achieve Scholars Experience Reflection Card

(Please Print Clearly)
Name of Experience_____

Date _____ **Student ID Number** _____

Full Name _____

Email _____

Signature* _____

*By signing this card, I pledge that I attended the *entire* event.
THIS CARD MUST BE TURNED IN AT THE END OF THE EXPERIENCE

Please rate: This experience overall	1	2	3	4	5
Newly formed connections to other people	1	2	3	4	5
New understandings of a particular topic	1	2	3	4	5

(1=least educative, 5=most educative)

You must complete the back of the card to receive Think Achieve Scholars credit.

Think Achieve Scholars Experience Reflection Card

(Please Print Clearly)
Name of Experience_____

Date _____ **Student ID Number** _____

Full Name _____

Email _____

Signature* _____

*By signing this card, I pledge that I attended the *entire* event.
THIS CARD MUST BE TURNED IN AT THE END OF THE EXPERIENCE

Please rate: This experience overall	1	2	3	4	5
Newly formed connections to other people	1	2	3	4	5
New understandings of a particular topic	1	2	3	4	5

(1=least educative, 5=most educative)

You must complete the back of the card to receive Think Achieve Scholars credit.

Think Achieve Scholars Experience Reflection Card

(Please Print Clearly)
Name of Experience_____

Date _____ **Student ID Number** _____

Full Name _____

Email _____

Signature* _____

*By signing this card, I pledge that I attended the *entire* event.
THIS CARD MUST BE TURNED IN AT THE END OF THE EXPERIENCE

Please rate: This experience overall	1	2	3	4	5
Newly formed connections to other people	1	2	3	4	5
New understandings of a particular topic	1	2	3	4	5

(1=least educative, 5=most educative)

You must complete the back of the card to receive Think Acheive credit.

Think Achieve Scholars Experience Reflection Card

(Please Print Clearly)
Name of Experience_____

Date _____ **Student ID Number** _____

Full Name _____

Email _____

Signature* _____

*By signing this card, I pledge that I attended the *entire* event.
THIS CARD MUST BE TURNED IN AT THE END OF THE EXPERIENCE

Please rate: This experience overall	1	2	3	4	5
Newly formed connections to other people	1	2	3	4	5
New understandings of a particular topic	1	2	3	4	5

(1=least educative, 5=most educative)

You must complete the back of the card to receive Think Acheive credit.

Please describe what you learned during this experience:

What questions did this experience raise for you? Was it surprising in any way? What would have made this experience better?

Please describe how this experience may affect your future thoughts or action:

Please describe what you learned during this experience:

What questions did this experience raise for you? Was it surprising in any way? What would have made this experience better?

Please describe how this experience may affect your future thoughts or action:

Please describe what you learned during this experience:

What questions did this experience raise for you? Was it surprising in any way? What would have made this experience better?

Please describe how this experience may affect your future thoughts or action:

Please describe what you learned during this experience:

What questions did this experience raise for you? Was it surprising in any way? What would have made this experience better?

Please describe how this experience may affect your future thoughts or action:

Think Achieve

Think Achieve

Welcome Feed Profile

Welcome to the ThinkAcheive Beyond the Classroom information site!

We've tried really hard to make participating Beyond the Classroom easy. Below, there is a step by step guide for the two different ways you can earn points: through attending events and through contracts.

For Events:

1. Look at the Calendar (it is also on the left hand side of this page, and upcoming events are on the right)

2. Find an event you want to attend

3. Go to the event

4. Look for a person handing out "Experiential Learning Reflection Cards" at the beginning of the event

5. Fully complete this card and turn turn it in as you leave the event

For Contracts:

1) Identify a learning experience that fits into one of the following categories: Class or Community Project, Leadership Role, Internship, or Study Abroad

2) Find the "Student Initiated ThinkAchieve Experiential Learning Contract" (it is under "Forms" on the left hand side of this page)

3) Work with a Faculty, Staff or Community Member to complete this form before the experience begins, and submit it.

4) Wait to receive a "Reflection" Form from Think Achieve administration

5) Complete this form

For any questions: please contact Bengt Carlson at 425-5825 or look under "Forms" on the left hand side of this page and click on the form entitled "Concerning Earning Beyond the Classroom Points".

If you are confused about any of this, don't fret! Just call us at 425-5825.

Upcoming Events See All

Chattanooga Connections
Saturday, 9am

Go to www.OrgSync.com

Think Achieve

Think Achieve

Welcome Feed Profile

Upcoming Events See All

Chattanooga Connections
Saturday, 9am

Organization Overview

ThinkAchieve: Creating Connections uses critical thinking as the foundation for each of its student-centered links. We believe that students who have become competent in the areas of creative and critical thinking will achieve higher levels of success. Their success at becoming critical thinkers will fuel their achievements in academics, in their careers, and in their lives. We also know that critical thinking cannot be an isolated outcome and must be addressed within an integrated community of learning that emphasizes growth across multiple disciplines and experiences. To learn more about ThinkAchieve: Creating Connections, visit http://www.utc.edu/ThinkAchieve/

Website http://www.utc.edu/ThinkAchieve/

Category Think Achieve

If you are confused about any of this, don't fret! Just call us at 425-5825.

Think Achieve

Calendar

«Prev August 2012 Next »

Go to Today Share Skip to Month: August 2012 Filter: All Categories

Sun	Mon	Tues	Weds	Thurs	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16 7pUTC Night @ ...	17	18
19 6:30pOak Street R...	20	21	22	23	24	25 9aChattanooga ...
26	27	28	29 12pLunch & Lead...	30	31	

Entertainment - Dean of Students Office General - Dean of Students Office General
Leadership - Dean of Students Office

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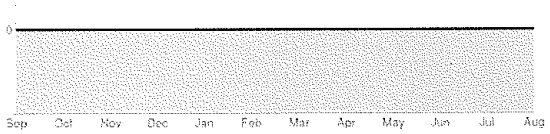
Involvement Summary

Hours Involved Per Month



Top Learning Outcomes

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Organization Memberships

Organization Name	Date	Position	Reports: Full | Record	Status	Options
Student Government Association	Fall 2012 - Current	Member		Approved	
Elections	Fall 2012 - Current	Member		Approved	

Activities

Event Name	Date	Hours	Organization Name	Reports: Full | Record	Status	Options

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Susan Ritz

| susan-ritz@utc.edu

This is an Unofficial Transcript

Clubs and Organizations

Organization Name	Positions	Date(s) Held
Student Government Association Fall 2012 - Current	Member	
Elections Fall 2012 - Current	Member	

Welcome Week Experiential Learning Activities 2012

Experiential Learning Activity	#Student Leaders	# Student Participants
Top 10 Free Places To Go in Chattanooga with River City Company	2	23
Chattanooga Biking and History Tour	1	Cancelled*
Get Out on Lookout: History and Adventure Hike	2	10
E. Chattanooga Improvement Inc. Neighborhood Revitalization Extravaganza	2	22
a Paz Healthcare, Education and FUN!day	2	6
LifeSpring Community Health Clinic Tour and Care	2	6
Mocs Insider Campus History, Leadership and Sustainability Tour	2	Cancelled*
Public Art Tour and Possible Creation with Mark Making	2	14
UTC Sustainability Garden Intro/Crabtree Farms Work and Harvest Day	3	7
Water Travel (Paddleboard, Canoe, Kayak) and Clean Up on Tennessee River	2	16
Community Kitchen Tour and Volunteering	2	6
Total	**22**	**110**

**Cancelled due to low registration. Data reflect registration numbers as of 8/21/12.*

Faculty and Staff Welcome Week Event Facilitators 2012

Facilitator	Department	College/Unit
Roger Thompson	Criminal Justice	Arts and Sciences
Anna Muller	Aquatic and Recreation Center	Administration
Lisa-Michelle Brower	Center for Advisement and Student Success	Administration
Jessica Darcey	Center for Advisement and Student Success	Administration
Blake Pierce	Center for Advisement and Student Success	Administration

Appendix E

Assessment Activity Documents

Think Achieve
CREATING CONNECTIONS

QEP Assessment Taskforce
Topical Sessions

Date	Time	Location	QEP Session Topic	Participants
Tues 3/27	9-10 a.m.	551 Oak St. Building	Pre-Orientation/Orientation Assessments	Fran Dawn Cecelia Susan
Tues 3/27	3-4 p.m.	Hooper 204	Evaluation of Faculty Development Offerings	Dawn Nesli Nicholas Susan
Wed 3/28	2-3 p.m.	Tower Room	ETS Proficiency Profile Exam (PPE)	Dick Nesli Betsy Susan
Wed 4/4	2-3 p.m.	Tower Room	Mini-Grants Program Awards Assessment	Dawn Linda Bengt Fran Bev Nicholas Susan
Wed 4/11	2-3 p.m.	Tower Room	Critical Thinking Assessment Test (CAT)	Dick Cindy Nesli Amye Betsy Linda Dawn Susan
Tues 4/17	3-4 p.m.	Tower Room	Experiential Learning Welcome Week Project Assessment (Tentative - *Cancelled*)	Bengt/TFRep Nicholas Susan
Wed 4/18	2-3 p.m.	Tower Room	National Survey of Student Engagement (NSSE) & Faculty Survey of Student Engagement (FSSE) (*Rescheduled*– Moved to Fall Agenda)	Dick Cindy Nesli Amye Susan
Tues 4/24	2-3 p.m.	Hooper 204	Survey of Area Employers	Dick Cindy Cecelia Susan
Wed 4/25	2-3 p.m.	Tower Room	Faculty/Adjunct Orientation Program Assessment	Karen Dawn Barbara Bev Cecelia Susan

QEP Assessment Taskforce
ETS Proficiency Profile Exam Session
Tasks & Discussion Points
Wednesday 3/28/12

The ETS Proficiency Profile Exam will be used to assess percent graduating seniors proficient in "critical thinking." This data are collected as part of the Senior Exit Exam which is administered in the fall and spring semesters. As part of QEP assessment, we will watch for gains in the critical thinking sub-scores of graduating seniors.

Please review the attached Excel file, "ProficiencyProfileResults10-11." Items pertaining to critical thinking are highlighted in yellow in each of four areas (see four tabs):

a. Instructions (overview of test/description of critical thinking assessment)
b. Skill and Content Scores (norm-referenced results, by college and major)
c. Proficiency Scores (criterion-referenced scores, by college and major)
d. Percentile Ranks of Comp Schools

Dick will provide a detailed description of this test and its uses in the meeting.

Discussion Points

- How might these data be used over the five-year QEP period to assess various components of the plan?
- Assessment timeline (data collection and analysis)
- Potential additional questions to be added/sub-analyses/covariates
- Other methodological issues

QEP Assessment Taskforce
Faculty Development Offerings Session
FOCUS: Workshops
Tasks & Discussion Points
Tuesday 3/27/12

1. Under 'Elements to Support Programmatic Initiatives' in the QEP, please review *Faculty and Staff Development* (pp. 35-37). We will focus on elements under 'Training and Awareness' for this session (pp. 35-36), particularly workshops. We chose to start with this particular offering as we have our first two workshops coming up in April. Also, once we have a draft of this assessment tool, it may be useful in evaluating other offerings.
2. Please review *Assessment of Faculty Development Offerings* on the bottom of p. 42, QEP
3. Please review the Assessment Plan *Faculty Development/Curricular Integration* process evaluation information (p. 3). We will be focusing on the first line – and just 'workshops'
4. Review the following descriptions of two upcoming workshops:

Thinking Critically about the Teaching of Critical Thinking Workshop
Are we really successful at teaching critical thinking? How do we move from talking about critical thinking to doing it in the classroom? This workshop serves as an introduction to the challenges of inducing students to think more rigorously, systematically, and reflectively both within and across disciplines. Participants will step into the role of critical thinking learners, in order to experience and reflect upon the precise structures and formats of university teaching that induce students to think.

Team-Based Learning Workshop
It's not what you think. We've come a long way since we started putting students into groups for cooperative or collaborative learning. Team-based learning (TBL) is a more comprehensive, systematic approach to course design and organization that (1) puts a premium on assessment of individual student preparation outside of class, (2) puts students into roles of greater responsibility for their learning, and (3) holds students accountable for their work both as individuals and as members of a group. This method, developed by Larry K. Michaelsen, is effective in all disciplines and in classes of all sizes. In this workshop, participants will experience specific TBL practices, and experience the dynamic unique to the TBL classroom.

Discussion Points

- How do we assess these workshops for effectiveness?
- Should the survey(s) be content specific? Should they be the same for all workshops? Do they include both content-specific items and core items?
- What types of questions would be included on the survey(s)? Come prepared with sample questions.

Workshop Evaluation

[NAME OF WORKSHOP]
[DATE/SESSION]

Please rate your level of agreement with these statements:	**Strongly Disagree**	**Disagree**	**Neither**	**Agree**	**Strongly Agree**
1. I have learned something valuable from this workshop.					
2. This workshop was a good use of my time.					
3. I feel more informed as a result of this workshop.					
4. The workshop is relevant to UTC's campus.					
5. I feel confident to use what I've learned in my job at UTC.					
6. I will continue to educate myself about this workshop topic .					
7. I will use something I have learned in this workshop in my job at UTC.					
8. The instructional format of this workshop was effective.					

1. What do you feel were the *strengths* of this workshop?

2. In what ways could this workshop be *improved*?

3. What other areas of faculty development would you like to learn about? (*select all that apply*)

___Blackboard Training, *please specify*_____
___Software and Hardware Training, *please specify*_____
___ThinkAchieve Seminars (critical thinking classroom strategies), *please specify*_____
___Teaching and Learning Seminars, *please specify*_____
___Book Clubs, *please specify*_____
___Faculty Learning Communities, *please specify*_____
___Other training needs, *please specify*_____

4. Other comments:

QEP Assessment Taskforce
Mini-Grants Program Awards Assessment Session
Tasks & Discussion Points
Wednesday 4/4/12

Grants Program

The ThinkAchieve Quality Enhancement Plan (QEP) was developed to close the documented gaps between student and faculty perceptions of higher-level thinking skills in the classroom. To work toward this goal, small grants are available to fund the design, implementation, and assessment of active learning experiences in the classroom and beyond the classroom to promote the meaningful transformation of courses. Awardees will demonstrate that these new experiences are linked to ThinkAchieve student learning outcomes, thus broadening the UTC experience for students.

Key Points about the Program

- Grants are available to all UTC faculty and staff (part-time and full-time).
- Grant applications are accepted on a rolling basis, but applications should be submitted at least 30 days before the anticipated start date of the project.
- Projects should be completed by the end of the term for which the grant was awarded (fall, spring, or summer).
- In the Classroom grants are available for active learning activities to enhance the classroom experience. The maximum award amount is $1,000.
- Beyond the Classroom grants are available to fund student experiential activities. The maximum award amount is $1,500, and travel expenses may be included in the grant proposal.

Please review the attached two sets of grants guidelines for the *In the Classroom Program* and *Beyond the Classroom Program* and come prepared to address the following discussion points.

Discussion Points

- What questions should we ask to assess the following components of program:
    - Process of applying
    - Adequacy of funding
    - Usefulness of the program in helping faculty/staff reach their teaching goals
- What other questions need to be asked? Will demographic data be useful?
- How can we use faculty project assessment data to inform the QEP?
- Other questions/comments

Mini-Grants Program
Faculty/Staff Evaluation

Please rate your level of agreement with the following statements:	**Strongly Disagree**	**Disagree**	**Neither**	**Agree**	**Strongly Agree**
1. The grant guidelines were easy to understand.					
2. The process of applying for the grant was efficient.					
3. Funding was adequate for my project needs.					
4. The reporting requirements were reasonable.					
5. I had enough time to complete all reporting requirements for the grant.					
6. This awards program was useful in helping me reach my teaching goals related to critical thinking.					
7. I learned something about assessing student learning outcomes related to critical thinking.					

1. What do you feel were the most *useful* aspects of this program?

2. In what ways could this program be *improved*?

3. What other areas of faculty development would you like to learn about? (*select all that apply*)

___Blackboard Training, *please specify*_____
___Software and Hardware Training, *please specify*_____
___ThinkAchieve Seminars (critical thinking classroom strategies), *please specify*_____
___Teaching and Learning Seminars, *please specify*_____
___Book Clubs, *please specify*_____
___Faculty Learning Communities, *please specify*_____
___Other training needs, *please specify*_____

4. My grant project was (circle one): In-the-Classroom Beyond-the-Classroom

5. Other comments:

Appendix F

Program Leadership

ThinkAchieve Grants Program Taskforce 2012

Taskforce Member	Department	College/Unit
Dawn Ford	Walker Center for Teaching and Learning	Administration
Linda Johnston	School of Education	Health, Education and Professional Studies
Peggy Kovach	Biological and Environmental Sciences	Arts and Sciences
Robbie Myers	Undergraduate Student	Student

ThinkAchieve Experiential Learning Taskforce 2012

Taskforce Member	Department	College/Unit
Dee Dee Anderson	Student Development	Administration
Jose Barbosa	Biological and Environmental Sciences	Arts and Sciences
Fran Bender	Student Retention and Success	Administration
Bengt Carlson	Student Retention and Success	Administration
Amy Doolittle	Social Work	Health, Education and Professional Studies
Martina Harris	School of Nursing	Health, Education and Professional Studies
Rebecca Jones	English	Arts and Sciences
Gary McDonald	Mechanical Engineering	Engineering and Computer Science

ThinkAchieve Assessment Taskforce 2012

Taskforce Member	Department	College/Unit
Neslihan Alp	Engineering Management	Engineering and Computer Science
Nicholas Boer	Health and Human Performance	Health, Education and Professional Studies
Beverly Brockman	Marketing	College of Business
Betsy Darken	Mathematics	Arts and Sciences
Dick Gruetzemacher	Institutional Research	Administration
Barbara Norwood	School of Nursing	Health, Education and Professional Studies
Susan Ritz	University Planning	Administration
Cynthia Taylor	Institutional Research	Administration
Amye Warren	Psychology	Arts and Sciences
Cecelia Wigal	Industrial Engineering	Engineering and Computer Science

ThinkAchieve Advisory Board 2011-2012

Board Member	Department	College/Unit
Karen Adsit	Lifelong Learning	Administration
Dee Dee Anderson	Student Development	Administration
Deborah Arfken	University Planning	Administration
Fran Bender	Student Retention and Success	Administration
Vic Bumphus	Criminal Justice	Arts and Sciences
Virginia Cairns	Library	Library
Andrew Clark	Undergraduate Student	Student
Sara Coffman	English	Arts and Sciences
Dick Gruetzemacher	Institutional Research	Administration
Matthew Guy	English	Arts and Sciences
Andrew Horton	Athletics Administration	Administration
Linda Johnston	School of Education	Health, Education and Professional Studies
Deborah McAllister	School of Education	Health, Education and Professional Studies
Robbie Myers	Undergraduate Student	Student
Victoria Steinberg	Foreign Language and Literatures	Arts and Sciences
Kathleen Wheatley	Management	College of Business
Cecelia Wigal	Industrial Engineering	Engineering and Computer Science

Advisory Board and Committee Participation by College/ Unit 2011-2012

Member	Role(s)*	Department	College/Unit
Karen Adsit	AB	Lifelong Learning	Administration
Dee Dee Anderson	ELTF, AB	Student Development	Administration
Deborah Arfken	AB	University Planning	Administration
Fran Bender	ELTF, AB	Student Retention and Success	Administration
Bengt Carlson	ELTF	Student Retention and Success	Administration
Dawn Ford	GPTF	Walker Center for Teaching and Learning	Administration
Dick Gruetzemacher	ATF, AB	Planning, Evaluation, and Institutional Research	Administration
Andrew Horton	AB	Athletics Administration	Administration
Susan Ritz	ATF	University Planning	Administration
Cynthia Taylor	ATF	Planning, Evaluation, and Institutional Research	Administration
Jose Barbosa	ELTF	Biological and Environmental Sciences	Arts and Sciences
Vic Bumphus	AB	Criminal Justice	Arts and Sciences
Sara Coffman	AB	English	Arts and Sciences
Betsy Darken	ATF	Mathematics	Arts and Sciences
Matthew Guy	AB	English	Arts and Sciences
Rebecca Jones	ELTF	English	Arts and Sciences
Peggy Kovach	GPTF	Biological and Environmental Sciences	Arts and Sciences
Victoria Steinberg	AB	Foreign Language and Literatures	Arts and Sciences
Amye Warren	ATF	Psychology	Arts and Sciences
Beverly Brockman	ATF	Marketing	College of Business
Kathleen Wheatley	AB	Management	College of Business
Neslihan Alp	ATF	Engineering Management	Engineering and Computer Science
Gary McDonald	ELTF	Mechanical Engineering	Engineering and Computer Science
Cecelia Wigal	ATF, AB	Industrial Engineering	Engineering and Computer Science
Nicholas Boer	ATF	Health and Human Performance	Health, Education, and Professional Studies
Amy Doolittle	ELTF	Social Work	Health, Education, and Professional Studies
Martina Harris	ELTF	School of Nursing	Health, Education, and Professional Studies
Linda Johnston	GPTF, AB	School of Education	Health, Education, and Professional Studies
Deborah McAllister	AB	School of Education	Health, Education, and Professional Studies
Barbara Norwood	ATF	School of Nursing	Health, Education, and Professional Studies
Virginia Cairns	AB	Library	Library
Andrew Clark	AB	Undergraduate Student	Student
Robbie Myers	GPTF, AB	Undergraduate Student	Student

**ATF=Assessment Taskforce ELTF=Experiential Learning Taskforce GPTF=Grants Program Taskforce AB=Advisory Board*

Appendix G

CAT Data

Demographic Characteristics of CAT Participants and UTC Students 2011-2012

Demographics	Categories	N CAT Freshman Participants (n=179)	% CAT Freshman Participants	N UTC 1st Time Freshman (n=2186)	% UTC 1st Time Freshman	N CAT Senior Participants (n=200)	% CAT Senior Participants	N UTC Seniors Graduates (n=817)	% UTC Senior Graduates
Gender	Female	105	58.7	1280	58.6	111	55.5	473	57.9
	Male	69	38.5	906	41.4	89	44.5	321	39.3
	Unknown	5	2.8	0	0	0	0	23	2.8
Age	≤ 20 years	173	96.6	2161	98.9	2	1.0	7	.9
	21-25 years	0	0	16	0.7	164	82.0	660	80.8
	≥ 26 years	0	0	9	0.4	32	16.0	127	15.5
	Unknown	6	3.4	0	0	2	1.0	23	2.8
Race/Ethnicity	Non-Hispanic White	118	65.9	1068	48.9	152	76.0	640	78.3
	Racial Minority/Other	56	31.3	1019	46.6	52	26.0	131	16.0
	Unknown	9	5.0	30	1.4	1	0.5	24	3.0
	Hispanic/Latino	4	2.2	69	3.1	8	4.0	22	2.7

Notes on the Racial/Ethnic Category:

CAT cumulative percentages of race/ethnicity may exceed 100% as participants may select more than one category.

Racial minority/other category includes African-American/Black, American Indian/Alaska Native, Asian, and Native Hawaiian/Other Pacific Islander (and 'multi-racial' for UTC sample only).

UTC racial/ethnic classifications now include a "multi-racial" category, but the CAT does not. According to the Office of Planning, Evaluation, and Institutional Research, many UTC students who traditionally selected "White" are now acknowledging multiple racial/ethnic identities, which may in part account for the differences in racial/ethnic percentages of first-time freshmen.

CAT and UTC Graduating Seniors by College 2012

College	N CAT Seniors	% CAT Seniors	N UTC Seniors	% UTC Seniors
College of Arts and Sciences	91	45.5	337	41.3
College of Business	42	21.0	164	20.1
College of Engineering and Computer Science	35	17.5	82	10.0
College of Health, Education, and Professional Studies	29	14.5	211	25.8
Unknown College	3	1.5	23	2.8
Total	**200**	**100**	**817**	**100**

Student Learning Outcome One *CAT Means 2011-2012*
Students will be able to identify, evaluate, and interpret information by raising pertinent questions and identifying uncertainties

Q#	Skill Assessed by CAT Question	Freshmen Mean	Senior Mean	Mean Difference
Q1	Summarize the pattern of results in a graph without making inappropriate inferences	0.542	0.650	.108*
Q2	Evaluate how strongly correlational-type data supports a hypothesis	0.763	0.844	.081
Q5	Evaluate whether spurious information strongly supports a hypothesis	0.469	0.605	.136**
Q8	Determine whether an invited inference is supported by specific information	0.382	0.610	.228**
Q10	Separate relevant from irrelevant information when solving a real-world problem	2.886	3.065	.179
Q11	Used and apply relevant information to evaluate a problem	0.927	1.035	.108
Q13	Identify suitable solutions for a real-world problem using relevant information	0.615	0.945	.330**
Q14	Identify and explain the best solution for a real-world problem using relevant information	1.432	1.745	.313

**** p<.05 **p<.01***

Student Learning Outcome Two *CAT Means 2011-2012*
Students will be able to solve problems by determining limitations, making connections, and prioritizing the potential solutions

Q#	Skill Assessed by CAT Question	Freshmen Mean	Senior Mean	Mean Difference
Q4	Identify additional information needed to evaluate a hypothesis	0.633	1.163	.530**
Q7	Identify additional information needed to evaluate a hypothesis	0.607	0.660	.053
Q10	Separate relevant from irrelevant information when solving a real-world problem	2.886	3.065	.179
Q11	Used and apply relevant information to evaluate a problem	0.927	1.035	.108
Q12	Use basic mathematical skills to help solve a real-world problem	0.674	0.798	.124**
Q13	Identify suitable solutions for a real-world problem using relevant information	0.615	0.945	.330**
Q14	Identify and explain the best solution for a real-world problem using relevant information	1.432	1.745	.313
Q15	Explain how changes in a real-world problem situation might affect the solution	0.538	0.802	.264**

**** p<.05 **p<.01***

Student Learning Outcome Three *CAT Means 2011-2012*
Students will be able to create innovative solutions to problems through creative thinking

Q#	Skill Assessed by CAT Question	Freshmen Mean	Senior Mean	Mean Difference
Q3	Provide alternative explanations for a pattern of results that has many possible causes	0.506	0.982	.476**
Q4	Identify additional information needed to evaluate a hypothesis	0.633	1.163	.530**
Q6	Provide alternative explanations for spurious associations	1.062	1.385	.323**
Q7	Identify additional information needed to evaluate a hypothesis	0.607	0.660	.053
Q9	Provide relevant alternative interpretations for a specific set of results	0.612	0.815	.203**
Q15	Explain how changes in a real-world problem situation might affect the solution	0.538	0.802	.264**

**** p<.05 **p<.01***

Student Learning Outcome Four *CAT Means 2011-2012*
Students will be able to communicate ideas and information effectively

Q#	Skill Assessed by CAT Question	Freshmen Mean	Senior Mean	Mean Difference
Q2	Evaluate how strongly correlational-type data supports a hypothesis	0.763	0.844	.081
Q3	Provide alternative explanations for a pattern of results that has many possible causes	0.506	0.982	.476**
Q4	Identify additional information needed to evaluate a hypothesis	0.633	1.163	.530**
Q6	Provide alternative explanations for spurious associations	1.062	1.385	.323**
Q7	Identify additional information needed to evaluate a hypothesis	0.607	0.660	.053
Q9	Provide relevant alternative interpretations for a specific set of results	0.612	0.815	.203**
Q11	Used and apply relevant information to evaluate a problem	0.927	1.035	.108
Q14	Identify and explain the best solution for a real-world problem using relevant information	1.432	1.745	.313
Q15	Explain how changes in a real-world problem situation might affect the solution	0.538	0.802	.264**

**** p<.05 **p<.01***

*CAT **Total Scale** Means 2011-2012*

Q#	Skill Assessed by CAT Question	Freshmen Mean	Senior Mean	Mean Difference
Q1	Summarize the pattern of results in a graph without making inappropriate inferences	0.542	0.650	.108*
Q2	Evaluate how strongly correlational-type data supports a hypothesis	0.763	0.844	.081
Q3	Provide alternative explanations for a pattern of results that has many possible causes	0.506	0.982	.476**
Q4	Identify additional information needed to evaluate a hypothesis	0.633	1.163	.530**
Q5	Evaluate whether spurious information strongly supports a hypothesis	0.469	0.605	.136**
Q6	Provide alternative explanations for spurious associations	1.062	1.385	.323**
Q7	Identify additional information needed to evaluate a hypothesis	0.607	0.660	.053
Q8	Determine whether an invited inference is supported by specific information	0.382	0.610	.228**
Q9	Provide relevant alternative interpretations for a specific set of results	0.612	0.815	.203**
Q10	Separate relevant from irrelevant information when solving a real-world problem	2.886	3.065	.179
Q11	Used and apply relevant information to evaluate a problem	0.927	1.035	.108
Q12	Use basic mathematical skills to help solve a real-world problem	0.674	0.798	.124**
Q13	Identify suitable solutions for a real-world problem using relevant information	0.615	0.945	.330**
Q14	Identify and explain the best solution for a real-world problem using relevant information	1.432	1.745	.313
Q15	Explain how changes in a real-world problem situation might affect the solution	0.538	0.802	.264**
	TOTAL	**12.585**	**16.088**	**3.503****

p<.05** ****p<.01

Participant CAT Means Compared to National CAT Means 2011-2012

Q#	Skill Assessed by CAT Question	UTCFR Mean	NATFR Mean	ES/ PD	UTCSR Mean	NATSR Mean	ES/ PD
Q1	Summarize the pattern of results in a graph without making inappropriate inferences	0.54	0.58		0.65	0.67	
Q2	Evaluate how strongly correlational-type data supports a hypothesis	0.76	0.69		0.84	1.21	-.34***
Q3	Provide alternative explanations for a pattern of results that has many possible causes	0.51	0.67	-.19*	0.98	1.35	-.35***
Q4	Identify additional information needed to evaluate a hypothesis	0.63	0.96	-.32***	1.16	1.41	-.20**
Q5	Evaluate whether spurious information strongly supports a hypothesis	0.47	0.52		0.61	0.73	-.27***
Q6	Provide alternative explanations for spurious associations	1.06	1.04		1.39	1.56	-.20**
Q7	Identify additional information needed to evaluate a hypothesis	0.61	0.57		0.66	0.82	-.25**
Q8	Determine whether an invited inference is supported by specific information	0.38	0.46	-.16*	0.61	0.68	-.16*
Q9	Provide relevant alternative interpretations for a specific set of results	0.61	0.70		0.82	0.93	-.16*
Q10	Separate relevant from irrelevant information when solving a real-world problem	2.89	3.01		3.07	3.14	
Q11	Used and apply relevant information to evaluate a problem	0.93	0.88		1.04	1.11	
Q12	Use basic mathematical skills to help solve a real-world problem	0.67	0.75	-.17*	0.80	0.82	
Q13	Identify suitable solutions for a real-world problem using relevant information	0.61	0.75	-.16*	0.95	1.18	-.25**
Q14	Identify and explain the best solution for a real-world problem using relevant information	1.43	1.65		1.75	2.29	-.30***
Q15	Explain how changes in a real-world problem situation might affect the solution	0.54	0.52		0.80	1.15	-.34***
	CAT TOTAL SCORE	**12.58**	**13.66**	**-.22****	**16.09**	**19.04**	**-.51*****

ES = effect size (mean difference divided by pooled group standard deviation). 0.1-0.3 = small effect, 0.3-0.5 = moderate effect, >0.5 = large effect

*PD = probability of a difference. * p<.05 **p<.01 ***P<.001 (2-tailed)*

Senior CAT Means by College Compared to UTC and National Mean 2012

Q#	Skill Assessed by CAT Question	A&S Mean	COB Mean	ECS Mean	CHEPS Mean	UTC Mean	National Mean
Q1	Summarize the pattern of results in a graph without making inappropriate inferences	0.62	0.69	0.66	0.66	0.65	0.67
Q2	Evaluate how strongly correlational-type data supports a hypothesis	0.73	1.02	1.20	0.49	0.84	1.21
Q3	Provide alternative explanations for a pattern of results that has many possible causes	0.98	0.83	1.20	0.85	0.98	1.35
Q4	Identify additional information needed to evaluate a hypothesis	1.15	1.17	1.40	0.91	1.16	1.41
Q5	Evaluate whether spurious information strongly supports a hypothesis	0.60	0.64	0.77	0.38	0.61	0.73
Q6	Provide alternative explanations for spurious associations	1.39	1.36	1.58	1.21	1.39	1.56
Q7	Identify additional information needed to evaluate a hypothesis	0.65	0.71	0.77	0.55	0.66	0.82
Q8	Determine whether an invited inference is supported by specific information	0.62	0.52	0.74	0.59	0.61	0.68
Q9	Provide relevant alternative interpretations for a specific set of results	0.81	0.81	0.97	0.66	0.82	0.93
Q10	Separate relevant from irrelevant information when solving a real-world problem	3.07	3.05	3.00	3.10	3.07	3.14
Q11	Used and apply relevant information to evaluate a problem	0.96	1.00	1.14	1.17	1.04	1.11
Q12	Use basic mathematical skills to help solve a real-world problem	0.80	0.81	0.89	0.69	0.80	0.82
Q13	Identify suitable solutions for a real-world problem using relevant information	1.04	0.83	1.06	0.66	0.95	1.18
Q14	Identify and explain the best solution for a real-world problem using relevant information	1.69	1.98	1.77	1.59	1.75	2.29
Q15	Explain how changes in a real-world problem situation might affect the solution	0.82	0.86	1.02	0.45	0.80	1.15
	TOTAL	**15.90**	**16.27**	**18.14**	**13.94**	**16.09**	**19.04**

A&S*=College of Arts and Sciences*

COB*=College of Business*

ECS*=College of Engineering and Computer Science*

CHEPS*=College of Health, Education, and Professional Studies*

Appendix H

PPE Data

PPE Critical Thinking Assessments across Colleges 2012

PPE Critical Thinking Assessments	2010-2011 (n=1254)	2011-2012 (n=1189)	Difference
Percent UTC graduating seniors *proficient* at Reading-Critical Thinking Skill Level 3	**9.49%**	**7.03%**	**-2.46%**
College of Arts and Sciences	14.29	9.34	-4.95
College of Business	4.78	4.07	-0.71
College of Health, Education, and Professional Studies	5.29	5.86	0.57
College of Engineering and Computer Science	10.98	8.33	-2.65
Unknown College	6.93	6.32	-0.61
Percent UTC graduating seniors *NOT proficient* at Reading-Critical Thinking Skill Level 3	**74.24%**	**78.83%**	**4.59%**
College of Arts and Sciences	67.32	76.43	9.11
College of Business	79.68	81.71	2.03
College of Health, Education, and Professional Studies	80.77	81.69	0.92
College of Engineering and Computer Science	69.51	77.78	8.27
Unknown College	80.20	77.37	-2.83
UTC Critical Thinking Mean Score	**112.93**	**111.84**	**-1.09**
College of Arts and Sciences	113.76	112.12	-1.09
College of Business	112.11	111.21	-0.90
College of Health, Education, and Professional Studies	112.21	112.03	-0.18
College of Engineering and Computer Science	113.71	112.03	-1.68
Unknown College	112.25	111.79	-0.46
Critical Thinking Percent Institutions below UTC	**39%**	**19%**	**-20%**
College of Arts and Sciences	60	40	-20
College of Business	39	19	-20
College of Health, Education, and Professional Studies	39	40	1
College of Engineering and Computer Science	60	40	-20
Unknown College	39	19	-20

Note: Third category, 'marginal proficiency', is not shown in table.

Appendix I

NSSE/FSSE Data

NSSE/FSSE Comparisons of Perceptions of Student Engagement 2011-2012

Extent coursework emphasizes the following mental activities:	**Division/ Year**	**FSSE % 2011 (n=133)**	**NSSE % 2011 (n=779)**	**%DIFF Students**	**FSSE % 2011 (n=166)**	**NSSE % 2011 (n=814)**	**%DIFF Students**
Memorizing facts, ideas, or methods from course and reading	LD/FY	28	74	46	33	77	44
	UD/SR	22	69	47	32	67	35
Synthesizing and organizing ideas, information, or experiences	LD/FY	83	72	-11	82	72	-10
	UD/SR	90	72	-18	85	72	-13
Applying theories or concepts to practical problems or in new situations	LD/FY	78	66	-12	79	69	-10
	UD/SR	96	79	-17	79	78	-1
Analyzing the basic elements of an idea, experience, or theory	LD/FY	91	77	-14	91	77	-14
	UD/SR	90	83	-7	85	85	0
Making judgments about the value of information, arguments, or methods	LD/FY	72	69	-3	71	68	-3
	UD/SR	84	76	-8	72	72	0
Extent course structure (faculty)/college experience (students) contributed to knowledge, skills, and personal development in the following areas:	**Division/ Year**	**FSSE % 2011**	**NSSE % 2011**	**%DIFF Students**	**FSSE % 2011**	**NSSE % 2011**	**%DIFF Students**
Thinking critically and analytically	LD/FY	89	82	-7	95	74	-21
	UD/SR	98	84	-14	94	85	-9
Solving complex real-world problems	LD/FY	52	53	1	47	46	-1
	UD/SR	70	56	-14	68	59	-9

FSSE % and NSSE %=percentages of respondents who indicated "very much" and "quite a bit"

***Division**: LD=lower division classes (mostly first-year and sophomore students), UD=upper division classes (mostly junior and senior students)*

***Year**: FY=first-year students; SR=senior students*

2011 response rates: faculty (133/434 invited to participate) = 31%, students (779/3882 invited to participate) = 20%

2012 response rates: faculty (166/473 invited to participate) = 35%, students (814/5970 invited to participate) = 14%

NSSE Student Perceptions of Engagement Compared to National Means 2011-2012

During the current school year, how much has your coursework emphasized the following mental activities?	**Year**	**2011 UTC Mean**	**2011 NAT Mean**	**ES/ PD****	**2012 UTC Mean**	**2012 NAT Mean**	**ES/ PD****
Memorizing facts, ideas, or methods from course and reading	FY	2.97	2.95	.02	3.08	2.96	.13*
	SR	2.89	2.80	.10*	2.89	2.80	.10*
Synthesizing and organizing ideas, information, or experiences	FY	2.97	2.95	.02	2.96	2.99	-.04
	SR	3.04	3.11	-.08	3.02	3.14	-.15**
Applying theories or concepts to practical problems or in new situations	FY	2.88	3.09	-.25***	2.90	3.11	-.24***
	SR	3.17	3.25	-.10*	3.20	3.28	-.11*
Analyzing the basic elements of an idea, experience, or theory	FY	3.03	3.17	-.18**	3.09	3.20	-.14*
	SR	3.24	3.31	-.09	3.28	3.33	-.06
Making judgments about the value of information, arguments, or methods	FY	2.89	2.95	-.07	2.93	2.97	-.05
	SR	3.03	3.05	-.02	3.05	3.09	-.04
To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?	**Year**	**2011 UTC Mean**	**2011 NAT Mean**	**ES/ PD****	**2012 UTC Mean**	**2012 NAT Mean**	**ES/ PD****
Thinking critically and analytically	FY	3.18	3.25	-.08	3.03	3.27	-.31***
	SR	3.26	3.37	-.15**	3.34	3.40	-.08
Solving complex real-world problems	FY	2.57	2.73	-.17*	2.46	2.74	-.30***
	SR	2.63	2.84	-.22***	2.69	2.87	-.19***

1=Very Little, 2=Some, 3=Quite a Bit, 4=Very Much

Year: *FY=first-year students, SR=senior students*

** ***ES*** *= effect size (mean difference divided by pooled group standard deviation). 0.1-0.3 = small effect, 0.3-0.5 = moderate effect, >0.5 = large effect*

PD *= probability of a difference. * p<.05 **p<.01 ***P<.001 (2-tailed)*