

DRAFT

Analysis of University Documents Supporting the QEP

The goals expressed by Texas A&M University in relation to the improvement of Undergraduate education are not unique to Texas A&M. The nation has also seen the need for a change in the way students are educated. In the modern global society of rapidly changing technology and broad access to information, teaching students how to be active learners, analyzers, synthesizers, and evaluators is paramount.

The American Association for the Advancement of Science's turnkey book: [*Benchmarks for Science Literacy*](#) states a similar philosophy about education for all Americans.

“In a culture increasingly pervaded by science, mathematics, and technology, science literacy requires understandings and habits of mind that enable citizens to grasp what those enterprises are up to, to make some sense of how the natural and designed worlds work, to think critically and independently, to recognize and weigh alternative explanations of events and design trade-offs, and to deal sensibly with problems that involve evidence, numbers, patterns, logical arguments, and uncertainties.” (AAAS, 1993, p.1)

In addition, research universities are being challenged to provide high quality education to both undergraduate and graduate students. Currently, research universities have a tendency to place emphasis on graduate student and faculty research. The Boyer Commission on Education Undergraduates in the Research University, founded in 1995 and supported by the Carnegie Foundation for the Advancement of Teaching, published a report titled [*Reinventing Undergraduate Education: A Blueprint for America's Research Universities*](#) in 1998 directly targeting research universities need to provide quality education to undergraduates, “Research Universities have too often failed, and continue to fail, their undergraduate populations....Recruitment materials display proudly the world-famous professors, the splendid facilities and the groundbreaking research that goes on within them, but thousands of students

graduate without ever seeing the world-famous professors or tasting genuine research” (Boyer Commission on Educating Undergraduates in the Research University [Boyer], 1998, p. 5). Research universities have exceptional libraries and facilities to accommodate outstanding research, but undergraduates frequently are not given the opportunity to use these facilities, or taught how to properly do research. Undergraduates expect quality “education that, while providing the essential features of general education, also introduces them to inquiry-based learning” (Boyer, 1998, p. 1). Inquiry-based education provides undergraduates with the opportunity to supplement classroom learning with hands-on research. The skills developed can be applied to the professional setting following graduation. The Boyer Report defines inquiry-based education as “learning [is] based on discovery guided by mentoring rather than on the transmission of information. Inherent in inquiry-based learning is an element of reciprocity: faculty can learn from students as students are learning from faculty” (Boyer, 1998, p. 15).

Texas A&M University looked at the quality of undergraduate education in 1997 under the guidance of university President, Dr. Ray Bowen. Through a course of several committee and task force studies, with the outcomes included in the [Vision 2020, Enhancing the Undergraduate Experience](#), and [Murano reports](#), as well as the [Inventory of Inquiry-Rich courses](#) sponsored by the [Texas A&M University Quality Enhancement Planning \(QEP\) Council](#), inquiry/research-based education has continued to be documented as a key way to improve undergraduate education. Initially, the idea of using inquiry/research-based education to improve undergraduate courses was not widely received but the idea has developed into a university goal. This narrative will actively analyze university documents that indicate support of inquiry/research-based education of undergraduates at Texas A&M University.

Dr. Ray Bowen appointed a task force in 1997 whose objective was to determine what qualities will make Texas A&M a Top Ten university by the year 2020. This taskforce produced the university's strategic plan, [Vision 2020](#). The purpose of Vision 2020 is to identify ways in which Texas A&M may attain a Top Ten University status by the year 2020. The taskforce was broken into Theme Group Studies where each group identified key ideas and goals that would strengthen Texas A&M while in pursuit of being a Top Ten University. While there are many references to research throughout the Theme Group Study reports contained in the [Vision 2020 Groundwork report](#), the majority aligned with graduate and faculty research, not necessarily undergraduates, save for Key Idea One from the Arts and Sciences Theme Group, which includes founding an Honors College and Key Idea Three from the Faculty Theme Group which includes additional research opportunities for undergraduates (“Vision 2020 Groundwork” [Groundwork], p. 8, 13).

The last section of the [Vision 2020 Groundwork](#) report targets the vision of each Texas A&M College. Each college references excellence and leadership in research as key ways to improve the quality of education. It is here that the use of inquiry-based education was first mentioned. One of the main priorities, goals, and directions for College of Geosciences was to “transcend disciplinary impediments to develop inquiry-based, interdisciplinary teaching and research programs that prepare students for careers in resource development, environmental management, policy and planning, environmental law, biodiversity, landscape and coastal ecology, hazard mitigation and geobusiness” (Groundwork, p. 137). This first reference to inquiry-based education was the first step in the process of implementing inquiry/research-based education throughout the university.

The final Vision 2020 report, [*Vision 2020: Creating a Culture of Excellence*](#), outlines twelve imperatives containing specific actions to be taken in pursuit of making Texas A&M a Top Ten university. The third imperative focuses on the enhancement of the undergraduate academic experience. It states:

“Our first cause, that without which all others lose purpose, is the student. Our culture should value, above all else, the students and the educational opportunities afforded them, especially through excellence in teaching. Our need to be responsive to changing realities as well as the need for interdisciplinary work to solve complex problems lead to new thinking about curricula. Curricula must be in tune with the forces at work in the world, the needs of students, and the expert understanding of faculty” (p. 27).

Following the need to enhance the undergraduate academic experience, President Robert Gates, during his first [*Academic Convocation in 2002*](#), continued to implement the imperatives of Vision 2020 when he stated, “in achieving the imperatives of vision 2020, we will bring new commitment and heightened performance to our historic land-grant mission: teaching, research, and service.” It wasn’t until 2004 though that President Gates took a more active role in determining the best ways to tackle the Vision 2020 third imperative to enhance the undergraduate experience. In 2004, President Gates announced to the faculty senate that a major initiative for that year would be to enhance the undergraduate experience. Thereby a taskforce, which included faculty, student, staff, and administrative personnel, was created and designed to use current data to assess the current conditions of the undergraduate experience and identify unique and useful, short term and long term, recommendations to enhance it. The study culminated with the 2005 [*Enhancing the Undergraduate Experience*](#) report that identified, and discussed, 12 areas of the undergraduate experience that could be improved, such as the Core Curriculum; Freshman Experience; Honors, Leadership, and Learning opportunities; and

Undergraduate Research. In addition, the Task Force identified 5 capabilities that students earning an undergraduate degree from Texas A&M should possess: effective verbal and written communication, critical thinking and analysis skills, personal integrity, a depth of knowledge within a specific discipline, and they should diversify the global community.

Undergraduate research was identified as one of the key ways to build on and complement the Research I status, expand opportunities for students in college and university honors programs, and increase delivery of life-long learning course methodologies.

Inquiry/research-based education was again identified as the primary recommendation for improving the quality of undergraduate education. In addition, the Task Force identified its use would challenge the claim from the Boyer report that Research universities tend to limit the undergraduate use of research facilities on campus. The [*Enhancing the Undergraduate Experience*](#) report states,

“Inquiry/research-based learning will become the learning paradigm for as many of our undergraduate courses as is practicable with the creation of “I” courses (research/inquiry-based learning) to be taken by undergraduates during the first two years. Furthermore, all undergraduate degrees should offer an option for a summary research or scholarly project as a capstone experience. Implementation will allow Texas A&M University undergraduates to take better advantage of the wealth of research resources available on our campus” (“Enhancing the Undergraduate”[Enhancing], 2005, p. 6).

The Task Force indicated that in order for its implementation and use to be successful, Inquiry-based learning should be emphasized in particular courses, a summary research option should be available to students of all majors, current curricula should be modified to make the quality of education consistent from freshman year through to graduation, faculty support is paramount, and implementation must be taken in steps over at least ten years.

In August 2005, during a meeting with the Council of the Deans in 2005, President Gates elected to create a Task Force to continue the previous study regarding undergraduate research. The final results of this taskforce were explained in the [*Murano Report*](#). The taskforce began analyzing eighty-six recommendations that could potentially improve undergraduate education. These eighty-six recommendations were narrowed down to eighteen that would have either a combination of high impact with medium-to-high probability of success, or high impact with medium or low probability of success. Those in the former category were termed to be implemented “now,” while those in the latter category were termed “long term” to begin implementation in 2006, but would not be completed until 2008.

After the eighteen recommendations were selected, they were organized into six “big idea” groups. The use of inquiry and research-based education survived both cuts, and falls into big idea four,

“Complement Research I status with undergraduate research/inquiry activities. One of the defining features of education at TAMU is the central role of research as a learning paradigm. Immersion in the conceptualization and conduct of research/inquiry will be integrated into undergraduate education programs for students in all majors” (“Murano,” 2006, p. 11).

The taskforce and the university administration categorized the implementation of inquiry and research-based education as “long-term” because they are aware that in order to have a high impact result, the implementation “will need to be carried out in stages, gradually adding or modifying current course offerings” (“Murano,” p. 14). In addition, the taskforce indicated that a substantial amount of funding will be required for the implementation to be done correctly. By implementing inquiry and research-based education in stages, the progress can be monitored effectively and possibly limit additional expenses.

The [Murano report](#) works in conjunction with the *Enhancing the Undergraduate Experience* report to demonstrate the overall support of inquiry/research-based education throughout Texas A&M University. Then, in 2007, an inventory study was completed by the QEP Council, in conjunction with the Office of Institutional Assessment, to assess the current status of inquiry/research-based education.

The [Inventory](#) “provides the first ‘snapshot’ of Inquiry/Research-based Education for Undergraduates at Texas A&M, provides a launch point for discussion and continued refinement, and creates a baseline from which to direct future efforts implementing inquire/research-based education at Texas A&M” (“An Inventory” [Inventory], 2007, p. 24). The Inventory consisted of an online survey asking respondents to answer the questions 1) Would you agree or disagree with the statement; Intellectual inquiry and research represent important components of a well-rounded undergraduate education? and 2) Which of these statements would you most agree with?-Undergraduate education at Texas A&M has far too much, somewhat too much, the right amount, somewhat too little, or far too little of intellectual inquiry and research. Eighty-two percent of respondents to the first question agreed that “intellectual inquiry and research represent important components of a well-rounded undergraduate education.” In response to the second question, fifty-nine point six percent stated Texas A&M has “somewhat too little” and eighteen percent believed there is “far too little” of intellectual inquiry and research. (Inventory p. 2)

In addition, “the inventory identifies inquiry-rich components of existing coursework and activity will mark the starting point for future development of inquiry/research-based education of undergraduates” (Inventory, p. 1). It matched up competencies which should be developed through inquiry/research-based education with actual course syllabi. This process proves the

increasing popularity, university faculty and administration acceptance, and usefulness of inquiry/research-based education. Following this study, a [vignette series](#) was created to showcase good practices in inquiry/research-based education at Texas A&M to further illustrate how it can be implemented into courses, its effectiveness, and encourage further support.

Through the studies conducted on the Texas A&M University campus, it has been determined that inquiry/research-based education improves quality of undergraduate education, it improves the overall undergraduate experience, and the reputation of being a Research I University. The studies indicated that implementation will be a long-run process with worthwhile benefits. “It is now time for universities like Texas A&M to step up to this challenge and offer its students an educational experience that can only be found at a comprehensive research university” (Enhancing).

Works Cited

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