

Inquiry-Based Course Development and Redesign Grant Request for Proposals

The Office of Undergraduate Research and Inquiry (OURI) is pleased to accept proposals from departments and faculty to develop or redesign courses to focus on inquiry-based experiential education. These courses will ensure “students will be introduced to the tools and technologies of their disciplines” through “enhanced discipline-based courses” (*Learning By Doing: Inquiry-Based Experiential Education*, p. 17).

Explanation of Inquiry-Based Experiential Education courses:

Inquiry-based discipline-specific courses can include a variety of skills including qualitative and quantitative literacy, framing of questions or problems, exploring questions or problems through appropriate discipline-specific processes and methods, and drawing a variety of conclusions based upon acquired skills within a theoretical framework. In the sciences this will likely include hypothesis generation and testing, while in the arts this will likely include conceptualizing and creating a product (a work of art: a painting, a sculpture, a poem, a music score) or performance (a recital, play, or other creation). In inquiry-based courses students are given the direction to examine alternatives within the discipline and draw conclusions through individually guided explorations.

Departments and professors will play a vital role in creating courses that will scaffold students through the inquiry process at a level commensurate with students’ knowledge and abilities. When using inquiry-based lessons, professors are responsible for: starting the inquiry process; promoting student dialog; transitioning between small groups and classroom discussions; intervening to clear misconceptions or develop students’ understanding of content material; modeling scientific or artistic procedures and attitudes; and, utilizing student experiences to create new content knowledge. (Llewellyn, 2002)

“At the discipline-based skills course level, students will learn about:

- Their faculty member’s area of research and current topics of interest;
- Application of practices and methods (including tools and technology) within a discipline, done in a scaffolded approach, in a lab, studio, field or office setting;
- Intermediate level hypothesis and problem-framing processes related to higher level skills related to research and inquiry;
- Performance of an authentic inquiry-based project using acquired skills in response to a hypothesis or inquiry-based problem;
- Communication skills such as report writing;
- Application of work in the four SLO areas” (*Learning By Doing*, pp. 19-20)

When incorporating inquiry-based methods into the classroom, departments and professors should engage students in a variety of activities ensure that students have the opportunity to successfully move through the inquiry cycle not just at the course level, but as they move through their major program. This six-stage inquiry cycle (identified by Llewellyn, 2002, p. 13-14) and potential courses activities and objectives are identified below:

Stages of the Inquiry Cycle and possible activities associated with that stage

- 1 Inquisition – stating a "what if" or "I wonder" question to be investigated
 - Classroom activities that engage students in information literacy or discipline-specific forms of communication such as written, oral, or other means to examine questions/problems
 - Teaching modes of inquiry that are discipline-specific.
- 2 Acquisition – brainstorming possible procedures
 - Review of various approaches and methods specific to the discipline that could be used to examine questions or problems
 - Teaching skills (equipment use, stats, software, etc.) needed to employ those modes of inquiry.
- 3 Supposition – identifying an "I think" statement to test
 - Coursework where students identify the strengths and weaknesses of various research and inquiry methodologies used to solve current problems or understand principles in the discipline
 - Teaching the process of asking and answering research questions (hypothesis formation and testing; creative works design and creation).
- 4 Implementation – designing and carrying out a plan
 - Assignments or projects in which students collect and analyze data,
 - Laboratory, field, or studio course components for specific skill building (e.g., instrumentation, performance styles, working with certain materials)
 - Requiring at least one inquiry based project or activity that applies the information.
- 5 Summation – collecting evidence and drawing conclusions
 - Assignments or projects in which students conduct analyses and reflect upon observations
 - Assignments or projects in which students create works of art and reflect upon their final product.
- 6 Exhibition – sharing and communication results
 - Research- and inquiry-focused writing assignments, performances, showcases
 - Teaching the ways in which outcomes are presented, shared and discussed with others (written/oral communication skill sets).

Goals for the OURI:

1. Enhancing the awareness, importance, and visibility of scholarship and inquiry at UT by actively promoting and supporting both faculty mentoring and student engagement in these key learning processes;
2. Increasing opportunities for student scholarship and creative works by developing more opportunities for faculty-student engagement for intensive mentoring and creative relationships;
3. Engaging more students in quality internship experiences through changes in curricular requirements, strengthening of the rigor of internship outcomes and improved relations with community partners; and
4. Enhancing the University organizational structure to support these experiential processes

Student Learning Outcomes for the OURI:

1. Improving critical thinking skills as determined by changes in student approaches and problem solving as measured by external and internal assessment instruments;
2. Improving communication abilities as determined by improvements in writing styles and abilities as measured by qualitative scoring rubrics and national normed tests;
3. Improving communication abilities in public speaking/presentation skills as measured by qualitative scoring rubrics and national normed tests;
4. Attaining practical skills related to the field of inquiry, including information/reference searching, quantitative literacy, creative thinking, and problem solving relative to projects and performance standards.

To review the University's Quality Enhancement Plan (QEP), follow this link:

<http://viewer.zmags.com/publication/4ca402a3#/4ca402a3/1>