

LARC 2.0 Inquiry-Based Course Innovation Proposal

1 Participant/Department

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2 Curriculum Innovation Type

Inquiry-based module

3 Course

College colloquium-"Ethics in Information Technology"

4 Narrative Description / Goals

If funded, this grant will support the creation of an "Introduction to research through inquiry-based learning" teaching module. The goal of this module is to build the foundation of students' research skills at an earlier stage.

Many students came to college without prior exposure to academic research. They often use their personal experience, feeling and subjective information as evidence and resources to support their arguments in presentations and in writing. Teaching students about general concepts of research as well as proper procedure to do research at an early stage has many benefit to motivate students.

The preliminary topics included in this module are:

- what entails research
- what are the proper research procedures
- different research types for different disciplines
- how to formulate good research questions
- how to go about answering those research questions
- how to identify the research sources, evidence
- how to evaluate the quality of research

with the following goals:

- to increase students' awareness of research in different disciplines

- to facilitate students' inquire-based learning
- to enable students to engage in meaningful research and reach out to broader audience
- to stimulate students' curiosity towards exploring the world with a purpose through research

The above mentioned topics will be integrated through inquiry-based learning in my college colloquium class "Ethics in Information Technology". The basic research methods will be discussed through lecture format. We will discuss different research methods for different field, such as scientific research versus humanity research. The new module will be added through a student group research project. In this project, students will be divided into groups, they can either formulate research questions based on the following topics or to propose their own research questions. They will then collect research data or reference material, design their research framework, report their research results through an in-class presentation and discussion.

- Strength and limitations of using copyright, patents, and trade secret laws to protect intellectual property.
- Software patents vs. new software development.
- Piracy and Intellectual Property
- Competitive intelligence vs. industrial espionage.

The proposed inquiry based learning process will motivate students to learn better through the process of answer those research questions.

5 Work Plan for the Grant Period

June-August 2016:

- Further research into curriculum design and inquiry based learning
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- July 2016: Undergraduate research lecture material design
- August 2016: Student group project planning and design
- September/October 2016: Assign student research groups, Student development of research questions, data and material collections, outline of the research model, develop in-class presentations
- November 2016: in-class presentation and discussion, peer evaluation and instructor evaluation.
- December 2016: Final instructor assessment, survey data analysis, write-up LARC report including lessons learned.

7 Form and Schedule for assessment of the innovation in Achieving the Stated Goals

The above mentioned project goals will be evaluated through entry and exit survey carefully designed after consulting with the university research librarians. The entry survey will be carried out in early September, the exit survey will be carried out in early November. The survey data will be analyzed to reflect the effectiveness of the proposed module.

8 Proposed Budget

The proposed budget is used for the following purpose:

Faculty stipend	\$2,000
Reference Books	\$ 250
Total amount requested	\$2,250

9 Reference Book List

1. Make Just One Change: Teach Students to Ask Their Own Questions by Dan Rothstein, Luz Santana, Wendy Puriefoy, 2011, \$25.60
2. Collaborating for Inquiry-Based Learning: School Librarians and Teachers Partner for Student Achievement by Virginia Wallace, Whitney Norwood Husid, 2011, \$40
3. The Undergraduate Research Handbook by Gina Wisker, 2009, \$32.99
4. Successful Strategies for Teaching Undergraduate Research by Marta Deyrup, 2013, \$72.00
5. Ethics in Computing: A Concise Module (Undergraduate Topics in Computer Science) 1st ed. 2016 Edition by Joseph Migga Kizza, 2016, \$49.99
6. Ethics and Technology: Controversies, Questions, and Strategies for Ethical Computing, 4th Edition by Herman T. Tavani, \$67.89