

2008-2009 SUN Grant Project Summaries

Category 1 - i2a and General Education

1. “Critical Thinking in Choice of Academic Major: Career Exploration, Decision Making and Clarity”, Leslye Erickson-Career Development Center and Amy Hirschy-Department of Educational Counseling & Psychology.

The overarching aim of this project is to integrate the Paul-Elder Critical Thinking Model into the academic major and career decision-making process of undergraduate students. By integrating critical thinking skills across the career decision-making process, students will demonstrate critical thinking and their ability to apply discipline/topic specific critical thinking skills using the real world problems: How do I choose a college major and thus a career? Specific goals include 1) to better understand how students use critical thinking skills in their academic major and career decisions and 2) to use this information to effectively enhance the quality of students’ career-decision making process. Thus, this project meets the i2a Category 1 goal of enhancing the role of critical thinking in the general education experience of students at the University of Louisville and the Category 2 goal of teaching students to apply critical thinking skills to real world problems.

Category 2-i2a and Undergraduate Major Courses

2. “Statistical Analysis and Critical Thinking”, Patricia Cerrito-Department of Mathematics.

The objective of this project is to improve the course, Math 560, Introduction to Statistical Data Analysis, to more fully incorporate the critical thinking concepts of Ideas to Action. Each student will complete a unique service learning research project related to some critical problems in healthcare. Students will examine the relationship of patient co-morbidities to treatment outcomes through an examination of the data. As each statistical method is taught in the course, students “drill down” into data to investigate more details. The materials to be adopted will be taken from the Medical Expenditure Panel Survey. The project will culminate in a final technical report. All of the reports will be submitted to a professional conference

related to health outcomes. In addition, the student reports will be combined into a casebook that will be uploaded to a print-on-demand marketplace available for external review.

3. “Teaching and Assessing Engineering Reasoning in Differential Equations”, Jeff Hieb - Department of Engineering Fundamentals.

ENGR205, “Differential Equations,” an upper level, second year, course, provides an opportunity to reinforce and develop critical thinking and engineering reasoning through: (1) explicit presentation of sophisticated engineering reasoning using the Elements of Thought from the Paul-Elder model, (2) assignments specifically designed to require students to demonstrate their critical thinking capabilities and describe engineering specific meta-cognitive activities, and (3) encouraging students to begin to apply the Universal Intellectual Standards to their own work, such as on homework problems or exam questions. The goal of the project is to realize these opportunities through revision of ENGR 205. These revisions will directly meet specific i2a outcomes for undergraduate major courses by incorporating specific elements of thought into discipline-specific learning objectives, content presentation, and assignments. They also address the i2a the undergraduate major course outcome of using the Universal Intellectual Standards as criteria for assessing quality of discipline-specific reasoning, by having students apply these standards to their own work.

4. "Mood, Critical Thinking and Cognitive Flexibility”, Rich Lewine-Department of Psychological & Brain Sciences.

The “broaden- and-build theory” suggests that positive mood enhances cognitive flexibility and creative problem solving (Frederickson & Joiner, 2002; Frederickson & Losada, 2005). Our goal is to incorporate experimentally based mood induction strategies into teaching that will enhance cognitive flexibility and critical thinking. Typical classroom instruction attends more to content and problem solving than to affective states of students. This protocol will focus on the specific emotional context in which critical thinking is evaluated and will serve to initiate further studies that examine more complex processes. As detailed below, this proposal will meet criteria for Category 2: i2a as described in the application guidelines. The mood inductions and assessments will be fully incorporated into Psychology 375 (Personality); assessments, via essays, will be based on applications of personality theory to real-world problems. The overarching question we ask is: “Does the induction of positive mood enhance student critical thinking, and more particularly cognitive flexibility?”

5. "Introduction to Engineering Course Revamp", James Lewis & David Wheatley-Department of Engineering Fundamentals.

The goal of this project is to revise most of the curriculum (syllabus, assignments, and evaluation) and assessment in ENGR 100 to explicitly include the Paul-Elder model of Critical Thinking. With this explicit inclusion of the Intellectual Standards and the Elements of Thought from the Paul-Elder model in classroom meetings as well as the curriculum, it is expected that the students will become more conscious of their thinking as well as the thinking processes of others. Assignments will need to be structured and presented to the students emphasizing the elements of the Paul-Elder model. By providing feedback on assignments based on the Paul-Elder model, it is our hope that the students will become aware of areas for their improvement in critical thinking. With a consistent approach throughout the course, it is also expected that students' ability to communicate and critically analyze material will significantly improve.

6. "Critical Analysis in Nursing Case Management", Mary Pat Wall, Karen Black, Diane Chlebowy, Vicki Hines-Martin, Patricia Martin, Karen Singleton-School of Nursing.

The purpose of this innovative, multi-faceted project is to enhance development of critical thinking skills in students enrolled in the upper division of the School of Nursing. The components of the Paul-Elder Critical Thinking Model will be incorporated into the teaching of case management in N371, Adult Health Nursing. Faculty will develop a videotaped client scenario for use a platform for classroom lecture, discussion both in class and on Blackboard, and a written assignment. The client depicted in the video case study will have complex physical and mental health conditions and significant socio-economic challenges representative of the general adult population in the region. Although this project will be implemented in the second semester of the junior year, students will be able to apply the knowledge and skills developed through the project in clinical courses taken in the senior year and, ultimately, to their practice as professional nurses.

Category 3-i2a and Culminating Experiences

7. "Shelter", Mary Carothers- Department of Fine Arts and Annette Allen-Department of Humanities.

As part of a newly designed course, ART 590: Collaborative Projects, Mary Carothers and Dr. Annette Allen are joining across disciplines to guide a group of artists and poets in a shared community project. Twelve artists and twelve poets will collaborate throughout the 2009 spring semester to produce three distinctly unique public exhibitions. The participating artists and poets will pair off to produce text and image responses to the word “shelter.” The title of this initiative is largely open to interpretation as collaborators may choose to address issues of home and family, the mortgage crisis, or other protective/sanctuary concerns, for example. Text and image pieces will be produced and presented formally at a gallery, alternatively in a public space and within a public school system.

Category 4-i2a and Signature Partnership Initiative

(Grants in this category are co-funded by the Office of Community Engagement’s Signature Partnership)

8. “A System to Facilitate Capstone Course Culminating Experiences that Involve Community Engagement through Signature Partnership Community Partners”, Donald J. Hagerty-Department of Civil & Environmental Engineering.

This project has 2 specific components, which are to incorporate critical thinking in capstone courses and create a database of capstone courses with SPI experiences. The specific goals for critical thinking in the capstone courses component are to 1) identify the fundamental characteristics of those capstone courses designed to meet accreditation requirements; 2) show how those courses incorporate the essential Elements of Thought and Intellectual Standards of the Paul-Elder model to develop the critical thinking traits of the model in engineering students; and 3) facilitate interaction among instructors and students involved in culminating experience courses and members of the community outside campus who might benefit by student efforts during those culminating experiences. The specific goals for the database component are to 1) build a system to categorize projects for community engagement so that connections can be made between groups needing assistance and the appropriate culminating experience course instructor and students; 2) incorporate that classification system in a database developed specifically for such work; 3) populate the database by interviewing members of the University Community Partnership Advisory Board and staff of the Office of Community Engagement and reviewing data collected for the U of L

proposal for the Carnegie Community Engagement Classification, and inserting collected data in the appropriate portions of the database; and 4) to develop a system to match community service projects with appropriate culminating experience courses.

9. “Developing Parental Support for Children’s Early Language Development: An Intervention Plan”, Jonathan Lee - Department of Teaching & Learning.

The Volunteers of America, Family Emergency Shelter seeks a means to measure and monitor the language development of the youngest children served – aged birth to five, and to provide a comprehensive model of prevention and intervention for these children. The College of Education and Human Development seeks: (a) to provide appropriate field-based practice to our Interdisciplinary Early Childhood Educator candidates in order to develop the pedagogical skills necessary for screening and assessment, (b) to establish a long term partnership with the VOA FES as training ground for Kentucky IECE teacher candidates in the fulfillment of our College’s conceptual framework of inquiry – as evidenced by research, action – as evidenced in practice, and advocacy – as evidenced by service (i2a SI), and (c) to provide an opportunity for teacher candidates to demonstrate well-cultivated critical thinking skills when engaging in an i2a culminating experience project (i2a -CE)