

## I. Infusing Undergraduate Research in Social Sciences\_Psychology\_Evolutionary Psychology

- a. Furrow, R. & Hsu (2019). Concept inventories as a resource for teaching evolution. *Evolution: Education and Outreach*, 12(2).  
Furrow and Hsu describe a collection of tools (scales) used to measure students' understanding of concepts in evolution. Concept inventories have been developed and validated for several different concepts in evolution, including evolutionary psychology. Inventories have been used as pre-post measures.  
*Level/type of research activity:* Exposure (Knowledge & Comprehension)  
*Course objective and SLO.* Identify the basic principles of evolution as a means to answer questions related to the living conditions (e.g., food, shelter, relationships, etc.) of human and nonhuman species. {*SLO 1:* Knowledge. Students will demonstrate content knowledge, core principles, and skills.}
- b. Edlund, J. E., & Sagarin, B. J. (2014). The mate value scale. *Personality and Individual Differences*, 64, 72-77.  
Edlund and Sagarin discuss how individuals perceive their own value as a mate and the value they place on their intimate partners or mates. The Mate Value Scale is used to assess this value. A sample question is, "overall how would potential intimate partners assess your level of desirability on the following scale?"  
*Level/type of research activity:* Skill Building (Application & Analysis)  
*Course objective and SLO.* Evaluate the use of at least three social science approaches (e.g., research reviews, qualitative research, and survey) to investigate some aspect of human behavior from an evolutionary perspective by proposing an original experiment. {*SLO 2:* Formulate Questions. Students will formulate research questions or scholarly/creative problems with integration of fundamental principles and knowledge in a manner appropriate to their discipline; *SLO 3:* Plan of Action. Students will develop and implement a plan of inquiry to address research and inquiry questions or scholarly problems}
- c. Nelson, C. E., Scharmann, L. C., Beard, J., & Flammer, L. I. (2019). The nature of science as a foundation for fostering a better understanding of evolution. *Evolution: Education and Outreach*, 12(6).  
Nelson et al. describes the relationships between the 'nature of science' and specific concepts in science. Discussions about the nature of science are intended to orient students to the systematic structure of science and how knowledge is produced. The general model can then be applied to specific concepts (e.g., evolution).  
*Level/type of research activity:* Skill Building (Application & Analysis)  
*Course objective and SLO.* Explain the meaning and application of theory in the natural sciences and differentiate theory from laws and principles. {*SLO 4:* Critical Thinking. Students will apply critical thinking skills to evaluate information, their own work, and the work of others}

## II. Research-Based Course Activities

- a. *Course activity (based on Furrow & Hsu, 2019)*  
Administer a concept inventory covering the major concepts in evolutionary psychology (10 to 12 concepts). Students will complete the inventory outside of class. In class, the answers to the inventory will be discussed. As part of the discussion, students will be asked to generate ideas about possible ways to investigate several concepts. For example, after revealing the correct answer to a question about the evolution of morality, the discussion will turn to ways to understand the concept through research.
- b. *Course activity (based on Edlund & Sagarin, 2014)*  
Students will be introduced to the concept-mate choice, one of the major concepts in evolutionary psychology. After discussing the concept, students will be asked to complete the Mate Value Scale. The results will be aggregated to help students gain an understanding of individual and aggregated results. Backward planning will be

used to help students understand the ‘results.’ For example, students will be asked to formulate a research question that might be asked, if conducting research using the Mate Value Scale.

*c. Course activity (based on Nelson et al., 2019)*

Students will be introduced to one or two case studies. The case studies will be reviewed to help introduce specific concepts (e.g., differential parent investment) through the nature of science. For example, if the case describes common paternal and maternal parenting patterns. Students will be asked to think about why there differences may be observed between the two, from an evolutionary perspective and such differences might be supported or refuted, through research.

**III. Assessing Undergraduate Research and Inquiry Activities**

Each course activity: Concept inventory, Mate value Scale, and case studies are intended to help students tap into their own background knowledge about various topics. Thus, the activities are not assessed for accuracy, but rather, each activity should lead to ideas about the various concepts. One KWL chart can be completed for each activity. A (K) (W) (L) chart is a tool that students can use to organize their research when starting on a project. It helps students to synthesize what they know (K), what they want to know (W), and what they have learned (L) about a topic. The chart is completed in three stages. The (K) or ‘know’ is completed before and during the completion of the activity. The (W) or ‘want to learn’ is completed before and during the completion of the activity. Finally, the (L) or ‘learned’ is completed after the activities have been completed, accurate answers have been discussed, and the group has an opportunity to pose questions. Five to 10 points can be assigned to the course activities for completing the KWL charts. The completed KWL charts (e.g., KWL chart produced after students complete the ‘concept inventory’) can be used more than once when covering various concepts in class.

**IV. Additional Resources**

**a. Faculty Resources:**

Evolutionary Studies (Evos) at Binghamton University (State University of New York) offers many ideas about teaching evolutionary concepts, <https://www.binghamton.edu/evos/>

The Human Behavior and Evolution Society is a society for those who study the evolution of human behavior, including evolutionary psychology, <https://www.hbes.com>

ProSocial World works to facilitate and inspire positive cultural change using evolutionary and behavior science, <https://www.prosocial.world/about>

**b. Student resources:**

Evolutionary Psychology: A how to guide, <https://labs.la.utexas.edu/buss/files/2013/02/Lewis-A1-Shawaf-Conroy-Beam-Asao-and-Buss-2017.pdf>

How to write research methodology: Overview, tips, and techniques  
<https://research.com/research/how-to-write-research-methodology>

**V. Contact Dr. Charles Dukes ([cdukes@fau.edu](mailto:cdukes@fau.edu)) for additional information about this discipline or this course.**