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NEWS RELEASE

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Experiential Learning Teaches Change and Adaptation

Study identifies the aspects of experiential education that impact students' agroecological efficacy

MADISON, WI, December 15, 2009 – Economics, environmental impacts, social dynamics, and production levels are all major factors that influence the overall success of an agroecosystem. Positive or negative, these factors enact change on the system, forcing individuals and social groups to continuously adapt farming and food systems in order to survive.

Experiential learning theory suggests that knowledge is gained as a direct result of firsthand experiences. Such lessons are especially valuable for environmental and agricultural educators as they consider strategies to help agroecosystem stakeholders learn how to manage change. Agroecosystems Analysis, a course conducted in a farm and rural landscape setting, is an example of an educational program that combines experiential learning and teaching. The course required students to ask questions and look at the complexities and interactions within an agroecosystem in order to develop problem-solving skills in the area of agroecology.

Dr. Kristyn Harms, an agricultural educator at Norris High School near Lincoln, NE, in conjunction with Dr. James King and Dr. Charles Francis of the University of Nebraska-Lincoln, conducted a mixed methods study which analyzed the impact of the agroecology course on enrolled students. Through a combination of pretests and posttests, daily qualitative evaluations, and personal reflections, they determined that the Agroecosystems Analysis Course measurably impacted participating students. The research results are published in the latest issue of the *Journal of Natural Resources and Life Sciences Education*.

Based on results from the study, a model was created that outlined the factors needed to create an effective experiential learning environment and, ultimately, engage behavioral change. Hands-on activities, emotional responses to experiences, human interactions, amount of self-efficacy, and intensity of experiences all contributed to an experiential learning environment that fostered behavioral change among participants. In addition, the length of course, appropriateness and rigor of content, learner-centered curriculum, ongoing education, and metacognitive processes clearly produced a more likely path for experiential learning. Economics, the environment, production-related factors, and social dynamics were also added to the model as contextual factors that influence the experiential learning environment. Inevitable changes in knowledge, attitude, skill, and behavior were considered as well. Ultimately, when working in a trusting learning community, the causal conditions of experiential learning and agroecological system factors create an environment where changes in knowledge, skills, attitudes, and behaviors are more likely.

Based on this study, future research should focus on analyzing the metacognitive processes present within experiential education, specifically within an agricultural environment. Further studies should also examine the impacts of the causal conditions for experiential education on the outer factors of the model (economics, environmental well-being, social dynamics, and production-based issues), and measure the correlation among causal conditions and behavioral changes of individuals participating in agroecology courses.

The full article is available for no charge for 30 days following the date of this summary. View the abstract at <http://www.jnrise.org/view/2009/e08-0042.pdf>. After 30 days it will be available at the Journal of Natural Resources and Life Sciences Education website, www.jnrise.org. Go to <http://www.jnrise.org/issues/> (Click on the Year, "View Article List," and scroll down to article abstract).

Today's educators are looking to the *Journal of Natural Resources and Life Sciences Education*, <http://www.jnrise.org>, for the latest teaching techniques in the life sciences, natural resources, and agriculture. The journal is continuously updated online during the year and one hard copy is published in December by the American Society of Agronomy.

The Soil Science Society of America (SSSA) is a progressive, international scientific society that fosters the transfer of knowledge and practices to sustain global soils. Based in Madison, WI, and founded in 1936, SSSA is the professional home for 6,000+ members dedicated to advancing the field of soil science. It provides information about soils in relation to crop production, environmental quality, ecosystem sustainability, bioremediation, waste management, recycling, and wise land use.

SSSA supports its members by providing quality research-based publications, educational programs, certifications, and science policy initiatives via a Washington, DC, office. For more information, visit www.soils.org.

SSSA is the founding sponsor of an approximately 5,000-square foot exhibition, *Dig It! The Secrets of Soil*, which opened July 19, 2008 at the Smithsonian's National Museum of Natural History in Washington, DC.