



Advanced Soil Physics Class Develops Research and Publication Skills

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Abstract

Graduate-level classes are more focused, but do not always provide students with an opportunity to develop cognitive and publication skills. Therefore, the aim of this class is to let students take ownership of and responsibility for their proposed research work, complete all specified tasks by the deadlines they set, and, by the end of semester, be able to produce a report at a level of quality appropriate for presenting their work at national conferences. Overall, 50% of the students missed one deadline for completing a specified task, but fewer students missed two or three deadlines. Overall, 50% of the students presented their research work as posters and 90% presented their work as oral presentations. When master's/ PhD students were compared, the majority of the papers came from PhD students. Overall, a majority of students rated the class as superior when compared to any other class, and the class developed responsibility and the cognitive and research skills of the graduate students.

Evaluating Capstone Courses: Employing the Five R's Model to Analyze an Agricultural Communications Magazine Class

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Abstract

The purpose of this study was to assess students' perceptions regarding the value of an agricultural communications magazine capstone course at the University of Arkansas in an effort to describe the characteristics leading to the course's success and to pilot a clear method of evaluating capstone courses. The course evaluators used the Model for the Integration of Experiential Learning into Capstone Courses (MIELCC) as a framework for the evaluation. Students reported receiving a valuable experience on all accounts. Based on the examination of students' perceptions through the lens of the model (MIELCC), the course fulfilled students' needs for experiential learning and prepared students for their careers. Students reported having improved

their levels of confidence in their communications skills and having improved important skills to prepare them for the workforce. For new and developing agricultural communications programs, the findings of this evaluation help solidify the need for a similar capstone course in the curriculum and provide a model that can guide capstone curriculum development and evaluation. The results also lead to the recommendation of modifications to the MIELCC to emphasize the importance of internal communications in the capstone experience and to introduce the concept of noise—situations when the system is hindered—in the capstone environment. This addition adds an element of realism to the model and helps account for difficulties encountered throughout capstone courses. Future studies should employ the MIELCC to examine successful magazine capstone courses in agricultural communications programs across the country in order to create guidelines for developing and improving such courses.

A Comparison of Web-Based and Traditional Instruction for Teaching Turfgrass Identification

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Abstract

Web-based instruction is growing at a rapid rate, but the ability to effectively teach lab skills in a web-based format may be a barrier to the development of distance education courses in turfgrass management. We conducted a study to compare the effectiveness of web-based versus traditional instruction for teaching turfgrass identification (ID). An introductory horticultural science class with four lab sections and a total enrollment of 88 students was the study setting. Quiz scores showed no difference in ability to identify live specimens of six turfgrass species between students receiving web-based versus traditional instruction. However, students receiving traditional instruction performed better on knowledge-based questions, in which they were asked to name which species corresponded to a written set of ID characteristics. Results suggested that web-based students' performance on knowledge-based questions may be improved by finding ways to increase their interaction with the content. Student performance on live-specimen ID or knowledge-based questions was not correlated with time spent



studying, or students' perceived importance of turfgrass identification, but it was correlated with confidence level. Our results show that web-based formats can be as effective as traditional methods in teaching students to ID live turfgrass samples.

A Short-Term Study Abroad Course in Costa Rica

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Abstract

Short-term study abroad programs are increasingly popular but their relative brevity makes it difficult to both successfully convey discipline-specific content and provide students with a meaningful cultural experience. Purdue University students participated in a 15-day course in Costa Rica in 2006 and 2008. Journals, group discussions, and a questionnaire administered at the end of the course were used to evaluate course impact on student comprehension of course material and interest in pursuing additional international experiences. Students agreed or strongly agreed that the course increased their knowledge of cropping systems and race and culture in Costa Rica and of the importance of biodiversity in agriculture. Journal entries and group discussions supported this self-assessment. At least 90% of the students agreed or strongly agreed that the course increased their interest in international agriculture and their interest in participating in another study abroad course. Seven of 19 eligible students (37%) subsequently participated in an additional international research or education program after completing the course. This paper describes the experience and provides prospective programs with a blueprint for implementing similar short-term international agriculture courses with a substantial field-work component.

A Longitudinal Study of Learner Characteristics and Experiences with a Distance Master of Agriculture Degree Program

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Abstract

This longitudinal study sought to identify trends in learner characteristics and program-related experiences in a distance-delivered Master of Professional Agriculture degree program. Between 2001 and 2009, notable progress had been made to lessen the significance of obstacles faced by off-campus graduate students. The average amount of time taken to complete the master's degree program decreased from 74.46 months for graduates surveyed in 2001 to 55.85 months for graduates surveyed in 2009. A majority of graduates surveyed in 2001 perceived three obstacles to be slightly significant to significant: "limited number of courses offered," "difficulty in balancing school, personal, and work responsibilities," and "cost of the program." However, a majority of graduates surveyed in 2009 perceived only two obstacles to be slightly significant to significant: "difficulty in balancing school, personal, and work responsibilities" and "attending sessions held on campus." Though there is still room for improvement relative to dealing with obstacles to off-campus study, efforts to improve distance learning in the College of Agriculture and Life Sciences at Iowa University have had a positive impact on graduates.

Mentoring Perceptions and Experiences of Minority Students Participating in Summer Research Opportunity Programs

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Abstract

Literature has documented the underrepresentation of minority students in higher education and the importance of mentoring programs in retaining these students in the academy. This study examines the perceptions of mentoring and actual mentoring experiences of minority students participating in two Summer Research Opportunity Programs (SROPs) at Iowa State University. Seven mentoring functions (Clarity of Project, Challenging Assignment, Training, Contact, Assistance, Feedback and Role Modeling) were identified through the literature as being important in the mentoring relationship. Findings indicated that the students' mentoring experience was better than expected, but students also noted that mentors should devote more attention to the Clarity of Project, Training, Contact and Role



Modeling functions. The findings of this study reinforce the importance of mentoring in SROPs. Implications for practice and recommendations for future research are also discussed.

Appraisal of Critical Thinking Skills in Animal Science Undergraduates who Participated on a Nationally Competitive Collegiate Judging Team

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Abstract

Evaluation courses have remained an integral part of collegiate animal science programs throughout the country and are a precursor for a national judging team. An evaluation course focuses on teaching students general accepted criteria for evaluating a particular animal, industry standards and rules to compare multiple animals, and emphasizes students being able to defend their judgments both written and orally. These skills are necessary for building well-rounded graduates. Participation on a judging team has been associated with developing problem solving and decision making, employer preferred life skills (Boyd et al., 1992; Rusk et al., 2002). Eight students in the Department of Animal and Veterinary Sciences at Clemson University took a standardized critical thinking exam. Four of the students had never taken an evaluation course or competed on a judging team (N) and the remaining four had taken an evaluation course and competed on a national judging team (J). All students were similar in regards to age, gender, classification and GPA. Because of the low sample size, and lack of a pretest, the tentative conclusion that we can draw from this exercise is that students who have participated in national horse judging contests subsequently demonstrate a higher level of critical thinking ability.

Perceptions of Agriculture and Perceived Enrollment Barriers to Agricultural Programs of Select Southern New Jersey High School Students

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Abstract

The purpose of this study was to assess the level of awareness of agricultural organizations and careers and perceived barriers to enrollment in agricultural programs of high school students in southern New Jersey. The students surveyed were selected based on teacher willingness to participate in the study. Therefore, the results are specific to this sample and should not be generalized to the larger population. The results showed the selected respondents were primarily female, white/Caucasian, lived in suburban areas, and had no family members involved in agriculture. Males were found to differ significantly from females in their awareness of outreach programs related to agriculture, and the same was found between whites and non-whites. The study also revealed that the selected respondents had a general lack of awareness in careers in agriculture. Three barriers emerged as the highest ranking barriers to enrollment in agriculture programs: lack of contact with program recruiters, interest in agriculture, and lack of opportunity while growing up to work on a farm. Males and females differed significantly in their perception of "image of agriculture barriers" and a significant difference was also found between whites and non-whites in their perception of "individual related barriers" to enrollment in agricultural programs.

Incorporating Group Problem Solving to Improve Student Learning in an Agricultural Genetics Class

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Abstract

Genetics for the College of Agriculture is traditionally taught as a lecture-only course in the Department of Animal Sciences and Industry at Kansas State University. In fall 2010, a weekly group problem-solving activity was incorporated. The course was divided into four units. Unit one covered mitosis, meiosis, Mendelian inheritance, sex-linked inheritance, and pedigree analysis; unit two addressed linkage, chromosome variation, DNA structure and replication, and transcription; unit three comprised RNA processing, translation, gene expression, mutations, DNA repair, and biotechnology; and unit four covered genomics, quantitative genetics, and population genetics. Pretests were administered before each unit in fall 2009 and 2010. Improvement from pretest to posttest



was used as a measure of student learning. For units one and two, student learning improved more when a group problem-solving activity was incorporated. Student learning did not differ for unit three; learning was greater with the lecture-only format for unit four. Although learning over all units was improved with a group problem-solving activity, the material covered appeared to affect which method maximized student learning.

Exploring the Teaching Beliefs of Excellent Undergraduate Professors

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Abstract

The world is rapidly changing and the next generation of college graduates will need to be prepared to solve complex global problems. Effective teachers in colleges of agriculture are a key piece of the solution to this issue. The purpose of this study was to explore the teaching beliefs of excellent college professors so that novice teachers may learn from their accomplished peers. This study used faculty in the Academy of Teaching Excellence at University of Florida as a case study. Based on the Teacher Belief Scale, the majority of professors were classified as enablers, meaning that this group was high in Sensitivity and high in Inclusion. Examining the teaching philosophy statements of this group showed that the majority of professors expressed high Sensitivity and at least a neutral level of Inclusion. When comparing the two measures of beliefs, it was concluded that these excellent professors are consistently expressing beliefs of Sensitivity, but inconsistently representing beliefs of Inclusion. Based on this study, novice teacher should aspire develop high levels of sensitivity and at least moderate levels of inclusion.

Effect of Supplemental Online Resources on Undergraduate Animal Science Laboratory Instruction

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Abstract

The objective of this study was to determine if supplemental online resource (SOR) availability in a

distance education (DistEd) format could enhance student learning. Students (n=137) in an undergraduate animal science laboratory course completed an anatomy pretest and pre-survey to assess their experience with, and attitudes towards, SOR. Supplemental Online Resource modules were made available for randomly selected laboratories. Two laboratory practical exams were administered and included questions from labs for which SOR was made available as well as labs that had no SOR. Questions from the pre-test were included in the exams and used to generate "posttest" scores. Student learning and performance was evaluated using a hierarchical design that included test scores, SOR availability and their interactions. Results are presented as mean±SEM. Posttest scores (87±2%) were higher (P<0.0001) than pretest scores (34±2%), indicative of student learning. On Laboratory Practical 1, students scored higher (P=0.0012) on questions from laboratories with SOR compared with laboratories without SOR (80±1% and 75±1%, resp.). In contrast, on Laboratory Practical 2, there was no effect of SOR supplementation on student scores (83±1% and 83±1%, for SOR and no SOR, resp.). A majority of students (93/137, 68%) surveyed indicated that SOR was at least somewhat useful for improving their grade.

Using Reflection to Gain Insight into the Student Teaching Experience

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Abstract

This study examined student teacher' perceptions related to the student teaching experience. Using a focus group process, the student teachers were asked to reflect on their expectations of the experience, how they applied previous learning from university coursework to the experience, and what could be done to improve the preparation of students for the experience. Because of the importance of instruction, FFA, and Supervised Agricultural Experience in teaching agricultural education, the three components of a complete agricultural education program were used as the context for the reflective session. A semi-structured set of questions were used in the focus group to gather participant responses. The session was



audiotaped and transcribed. The transcription served as the primary data source. Secondary data consisted of field notes written by one member of the research team. Content analysis was used to interpret the data. The results indicated that the student teaching experience was not what the participants thought it would be in many ways, especially the time commitment involved in preparing for the teaching and learning process. The participants provided insights for improving the preparation of future student teachers and recommendations are included.

An Experiential Learning Model of Faculty Development to Improve Teaching

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Abstract

This article introduces a model for faculty professional development. The National Research Council (2009) indicated that graduates of colleges of agriculture must be prepared to work in a complex world using skills such as critical thinking, problem solving, teamwork, and leadership. However, critics of higher education have insisted that many college graduates do not possess these desired skills and are increasingly underprepared to enter the workforce. To help better prepare students, instructors should focus on effective teaching strategies that engage students and promote learning. However, most faculty members are hired for their expertise in research and have little preparation in pedagogical techniques. Therefore, faculty development programs that teach instructors effective instructional methods are necessary. This article proposes an experiential learning model of faculty development, which consists of three stages, including planning, delivery, and evaluation. The model utilizes field experiences, reflection, and peer observation to help college instructors learn how to implement and use various instructional methods. The experiential learning model presented in this paper could help college of agriculture instructors become more effective in their teaching, thus meeting the call to improve undergraduate learning.

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