

Teaching/Undergraduate and Graduate Education: Learning Styles and Student Success

264 Developing critical academic and social connections for incoming students prior to the first day of classes using a combination of innovative programs . H. D. Tyler* and J. A. Sterle, *Iowa State University, Ames.*

At-risk college students are most successful if they develop early connections to the faculty and other students in their major. Accordingly, 3 strategies were developed to create meaningful connections to our program. First, a computer program was developed to survey students during Freshman Orientation on their interests and career goals and assign faculty academic advisers based on common interests. These students were able to connect with their adviser before coming to campus for classes; an added benefit is that these matched advisors are more able to provide appropriate career mentoring, having more contacts with the industry of interest for that particular student for finding relevant internships and jobs. Although students can re-enter the program and switch advisors at any time in their program, less than 5% actually do so. Second, the peer mentor program in our department was greatly expanded to allow selected, trained upperclassmen to mentor small groups of 6–10 new students during their first semester of college. All new students within a peer mentor group have the same faculty advisor; often, the peer mentor also shares the same advisor. Mentor groups meet at least once a week during their first semester in addition to taking relevant industry trips together. Lastly, Facebook groups were created for each cohort of potential incoming students 6 mo before their college entry date. This allowed them to establish relationships with other students and create a social network before the first day of school. Over 200 students were members of the group formed for incoming students in 2012. The types of posts evolved from the time the group was formed; initially, students shared information about themselves. After they signed up for classes, they sought information about our program, and finally after they arrived at Iowa State, they used the site to plan social activities and coordinate classes with their peers. Investing time and resources into the new student experience is crucial for developing successful relationships that are vital to student success.

265 Learning style preferences of animal science undergraduates. C. Mortensen* and A. Thoron, *University of Florida, Gainesville.*

Studies have linked higher student achievement when instructed in learning environments that match their learning styles. We administered 2 learning style instruments to investigate the learning style preferences of undergraduate students in the Department of Animal Sciences at the University of Florida. The Group Embedded Figures Test (GEFT) segregates students into either field-dependent or field-independent learning styles. The Gregorc Style Delineator (GSD) measures student's natural predispositions for learning along 4 bipolar continuous mind qualities: Concrete-Sequential (CS), Abstract-Sequential (AS), Abstract-Random (AR), and Concrete-Random (CR). Student scores were evaluated based on sex and their specific degree option: Food Animal Industry, Equine Industry, and Animal Biology (pre-veterinary medicine). Results of the GEFT indicated Animal Biology students had a higher preference for a field-independent learning style (mean score 14.0 ± 0.36) compared with Equine Industry (13.0 ± 0.79 ; $P = 0.10$) and Food Animal Industry (12.5 ± 1.04 ; $P \leq 0.05$) students. Male students (14.8 ± 0.64 ; $n = 26$)

had a higher preference ($P = 0.06$) for a field-independent learning style compared with female students (13.4 ± 0.36 ; $n = 129$). Overall, 63% of animal science students preferred a field-independent compared with 19% field dependent learning style, 18% remained neutral. Students with a field-independent learning style are described as being more analytical, find it easier solving problems, likely to favor learning activities that require individual effort, and are less receptive to social reinforcement. Field-dependent learners perceive globally, have a more difficult time solving problems, are more attuned to their social environment and tend to favor a spectator approach to learning. No differences were found among degree options or sex in GSD scoring. Overall, students scored higher in CS (48%) compared with AS (15%), AR (15%) or CR (21%) learning styles. The CS learner is described as relating to the concrete world with hands-on experiences, prefer structure and wants explicit and clear directions. Activities that accommodate CS learners are checklists, worksheets, demonstrations, outlines and diagrams.

Key Words: learning style

266 Motivation for undergraduate students to participate in an equine study abroad course. C. Brady¹, J. Peters², M. Voigt¹, and M. Russell², ¹*Department of Youth Development and Agricultural Education, Purdue University, West Lafayette, IN*, ²*Department of Animal Sciences, Purdue University, West Lafayette, IN.*

The purpose of this study was to assess what motivated students to participate in a short-term equine study abroad course. The survey instrument was adapted from an instrument validated for assessing motivation to participate in voluntary career development events. The adapted instrument was reviewed by an expert panel for content validity, and a post-hoc Cronbach's α coefficient of 0.943 demonstrated an excellent level of internal validity. The survey was administered following the Dillman Tailored Design Method to 22 students in fall 2012, after their participation in the study abroad course in spring 2012. Twenty-two 5-point Likert scale questions were used to measure self-efficacy and 4 motivation factors; attainment (significance of doing task well), cost (negative aspects of task), intrinsic (individual satisfaction in task) and utility (relationship of task to future goals). Sixteen students completed the survey, 15 females and 1 male. Cost motivation (4.43 ± 0.61) had the highest mean score, followed by self-efficacy (4.33 ± 0.53), intrinsic (3.99 ± 0.53), utility (3.94 ± 0.36) and attainment (3.45 ± 1.08). Means were compared using a paired sample t -test. Using a value of ($P < 0.05$) cost motivation was greater than all other factors. Self-efficacy was greater than either attainment or utility. Intrinsic motivation was only different from cost motivation, and there was no difference between attainment and utility motivation. There has been a perception that intrinsic motivation, was a primary motivator, but in this set of students, that perception was not supported. It is important to note that cost motivation were time and effort costs and did not include any items about material cost to participate. This study indicates that time cost is a primary student motivator, and short-term study abroad courses may be a path to involvement of more students in a study abroad experience.

Key Words: study abroad, student motivation

267 Student perceptions of sustainable and organic agriculture.

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Eighty-four students at 3 different universities were recruited for a survey that assessed their knowledge, attitudes, and opinions on the prospects of incorporating more curriculum on organic and sustainable agriculture. Respondents were enrolled in 1 of 4 agricultural courses or one biology class among the 3 universities. Subjects were asked to self-report basic demographic information and address a series of open-ended short answer questions developed by the investigators, including questions centered on the concepts of organic and sustainable agriculture. Students provided a range of words for the themes to define organic and sustainable agriculture. Overall, student responses demonstrated many different variations of organics. However, definitions of sustainable agriculture were more ambiguous. A prevailing view did not emerge from the data, with 13% reporting "do not know." Within the cohort, students' qualitative responses speculated that organic agriculture will increase in the future (40%), and 11% of students felt that it would decrease. With the remaining students perspectives speculating that organic agriculture will not change (4%) or will remain a minority in agriculture (11%). Nine percent of the students were unsure about whether organic agriculture would change at all and the remaining 25% not responding to the question at all. If a university was to implement a teaching plan that incorporates organic agriculture to a greater extent, students indicate they would prefer "hands-on" techniques (51%) and field work situations as the primary methods of learning. Traditional methods of discussion and lecturing were cited 4% and 7%, respectively. When asked about the utility of field trips as learning modality, 15% of the student responses agreed with this prompt. However, 68 students responded "no," 14 said "yes," and 3 did not respond. Those who volunteered a reason overwhelmingly cited "lack of time." Although the results indicated a lack of direct participatory interest, the results of this survey denoted a role for organic and sustainable agriculture in the curriculum.

Key Words: perceptions, organic, sustainable

268 Student engagement in learning anytime/anywhere: Enhancing learning with technology in the animal sciences. J. M. Osborne*, B. A. Wenner, T. A. Evans, M. C. Chakerian, R. W. Flood, M. R. Hendrick, and H. N. Zerby, *The Ohio State University, Columbus*.

Many courses in the OSU Department of Animal Sciences occur in a traditional setting with students attending lecture in person at scheduled times. Conversion from quarters to semesters and an institutional directive to align educational experiences with student needs prompted consideration of alternative forms of instruction. Instructors of the large enrollment (100+) writing course "Animals in Society" chose the Hybrid-Flexible (Hy-Flex) Instructional Model, which allowed students to attend twice-weekly lectures in-person or synchronously online. Lecture content was integrated in learning activities during weekly in-person recitation sections (25–30 students). Technologies to implement the Hy-Flex model for lectures were selected to permit students to vary mode of attendance on a daily basis and review lectures anytime-anywhere. The technologies were expected to support a robust

learning community and provide student-instructor interaction. Adobe Connect was the internet platform for lecture delivery and recording. Students responded to questions using Poll Everywhere software, which also provided a back-channel for student questions regardless of attendance mode. Small online discussion groups used the OSU course management system. In autumn 2012, 94 students consented to participate in a research study. Online attendance increased from 20 to 40% to 60–70% by the end of the term, with 49% of students attending more than 75% of lectures online. Eighty-four percent of students agreed that technology helped them actively participate in the course; 17% thought that technology hindered their interaction with the instructor. A slight majority (56%) agreed that instructional technology helped create a sense of community among students. There was no correlation between mode of attendance and overall grade or grade on writing assignments that required knowledge of lecture content. Results suggest that online attendance did not cause reduced understanding of course concepts and that technology can be used to support student engagement with course content and develop a learning community within a large enrollment course.

Key Words: technology, online, anytime/anywhere learning

269 Predicting the quality of an undergraduate animal science course using the IDEA survey. M. J. Anderson, K. J. Stutts, M. M. Beverly, and S. F. Kelley*, *Sam Houston State University, Huntsville, TX*.

The Individual Development and Educational Assessment (IDEA) survey is a mechanism that uses student feedback to assess and improve teaching, learning, and the higher education process. The IDEA survey contains questions pertaining to course objectives, teaching methods and styles, and a description of the course with the goal of determining the quality of the instructor and overall course. The objective of this study was to determine which of the survey questions were most important when predicting the quality of the course in undergraduate animal science courses. A step-wise regression analysis was performed on data from 238 courses spanning a 6-year period. Thirty-five of the 43 questions on the survey were included in the analysis. Eight questions were not included in the analysis because they involved students' preconceptions that could not be affected by the instructor during the course. This analysis indicated that only 6 of the 35 questions entered into the model were significant. These 6 questions had an r^2 of 0.7056 compared with an r^2 of 0.7443 for all 35 questions. The analysis indicated that these questions account for the majority of variation within the model. The top 3 questions with positive relationships toward predicting the quality of the course were: 1) the instructor demonstrated the importance and significance of the subject matter, 2) students made progress on gaining factual knowledge, 3) the instructor explained course material clearly and concisely. Conversely, a question pertaining to the instructor encouraging students to use multiple resources for research purposes had a negative relationship toward predicting the quality of the course. This indicated that students believed this area was not a valuable skill in animal science courses. In conclusion, an animal science instructor can improve the quality of their course by displaying the importance of the subject matter and clearly presenting the course material to expand the students' knowledge of that subject.

Key Words: IDEA, undergraduate teaching, animal science