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ABSTRACTS

Enhancing The Curricula Through Experiential Learning of Faculty Members

*Ed Brokaw
Abilene Christian University
210 Zona Luce Building
ACU Box 27986
Abilene, Texas 79699-7986
915/674-2401
e.brokaw@agenv.acu.edu*

Increasing the international dimension in curricula has become an important objective at most universities. To accomplish this goal, faculty members must equip themselves to deal with international issues. Studies have concluded that international experiences have a significant impact on adding a global perspective to teaching. The literature suggests that faculty who spend periods of leave in other countries expand their world view, more fully embrace the need for internationalization and are in a better position to encourage students to develop a better understanding of the world at large. Recommendations that Agriculture Faculty become involved in various international experiences and utilize these experiences in teaching have been made. A program that provides opportunities for faculty members to gain international experience will be presented. A faculty member's utilization of the program to teach at Makerere University in Kampala, Uganda during the spring term 1999 will be shared. Opportunities for enhancing the curricula by incorporating the insights gained from using the period of leave to gain international experience will be discussed.

Enhancing Learning and Efficiency of Student/Faculty Interactions via Computerized Practice Exercises

*Robert O. Burton, Jr.¹ and Sandra A. Flores²
¹Department of Agricultural Economics
Kansas State University, Waters Hall
Manhattan, KS 66506, 785-532-4436
bburton@agecon.ksu.edu
²Department of Communications
Kansas State University, Umberger Hall
Manhattan, KS 66506, 785-532-5130
sflores@oz.oznet.ksu.edu*

As deadlines for graded exercises and tests approach, students tend to ask more questions outside of class. These questions provide opportunities for faculty to confirm or correct students' understanding of course content. Such opportunities are important, potentially rewarding, and costly in terms of faculty time, especially when student numbers are large. In distance learning courses student/faculty interactions may involve additional costs such as long-distance telephone charges and time for typing e-mail messages. One potentially efficient method for providing faculty feedback for students is to provide practice exercises and tests. The purpose of this presentation is share and discuss a strategy for providing practice exercises and tests that is being used in a Farm and Ranch Management course. The course is taught on campus and via distance learning. During 1998 and 1999 nine practice exercises and a practice final exam were available. The practice materials are available on the world wide web. As students work through the practice materials they are informed of whether their answers are correct and are provided feedback to enhance learning when their answers are not correct.

Effective Utilization of Task Forces for Problem Solving By College of Agriculture Administrators

Larry J. Connor¹ and Jimmy G. Cheek²

*¹Dean Emeritus, LDAC@ufl.edu
(352) 335-4806*

*²Dean, University of Florida
College of Agricultural and Life Sciences
P.O. Box 110270
Gainesville, FL 32611-0270
JGCheek@ufl.edu
(352) 392-1961*

Deans and Directors of Academic Programs typically utilize a variety of approaches in problem solving within their specified areas of responsibility. Some of these various administrative approaches to problem solving include top down, bottom up, ad hoc delegation, standing committee referral, and task force approval. Administrators may use all these approaches over time, depending upon the problem one is facing, the resources available, and the administrative and support staff, and so forth.

The task force approach typically utilizes an ad hoc committee appointed by the Dean to develop recommendations for dealing with a specified problem(s). Many Deans use this particular approach over time, successfully or unsuccessfully. The major purposes of this paper are: to describe the rationale for utilizing the task force approach to problem solving, the typical processes utilized in such an approach, and the primary causes of task force failures. Finally, academic programs in the College of Agricultural and Life Sciences at the University of Florida are used as a case study of utilizing task forces for 1991-99.

Assessing The Effectiveness of Team Learning Experiences in Computer Lab Projects

*Joseph H Daniel, Assistant Professor
Delaware Valley College,
Doylestown, PA 18901
215-489-2498
danielj@devalcol.edu*

Success in the workplace frequently depends on the ability of our graduates to work in a team setting. With

this in mind, a professor should, as often as possible, provide the student with a team learning experience.

From the Fall 1997 Semester through the Spring 1999 Semester, the effectiveness of 178 teams was assessed in the areas of team performance, member influence, member satisfaction, team relationships, and member creativity.

An Analysis of Variance revealed that the effectiveness rating of 104 teams in Academic Year 1998-99 was significantly higher than the same rating of 74 teams in Academic Year 1997-98.

A Linear Regression Analysis of this assessment found that the teams in 1997-98, whose members were chosen by the students, did not feel effective as problem-solving teams and did not enjoy working with the members of the team.

However, the teams in 1998-99, whose members were selected by the professor based on the temperament types of Helper, Organizer, Thinker, and Catalyst, felt effective as problem-solving teams and trusted each member of the team.

In conclusion, the professor must get actively involved in the selection of team members in order to provide a more effective team learning experience for the student.

What And How Are Our Graduates Doing?

*M. LeRoy Davis
Agribusiness Department
California Polytechnic State University
San Luis Obispo, California 93407
805-756-5050
LDAVIS@CALPOLY.EDU*

Just as businesses around the globe conduct market research concerning their products, academia should survey their products (alumni). Results of Cal Poly Agribusiness alumni surveys conducted in 1985, 1994 and 1998 are included in this paper. The Department has been doing these surveys about every five years since the mid 1960s. They have helped in curriculum development, internal and external reviews, and have given our administration a better picture of who we are and what our graduates do after graduation.

Several questions are asked of the graduates about their experiences before entering the major, and while at Cal Poly, but the primary focus is on what they are doing after graduation. In the 1998 survey, we had 1157 respondents compared to 1227 in 1994 and 690 in 1985. In the 1998 survey, seventy eight percent had either been raised on a farm or had

farm or ranch experience prior to joining the major.

Questions were asked about current employment rate of graduates; employment status, *i.e.*, self-employed, upper management, etc; number of jobs held; employment relationship to agriculture; field of employment; and several questions were asked concerning salaries. Most of these were cross-tabulated by the year of graduation.

Employment Program at Delaware Valley College

Mike Ellis

Office of Career and Life Education

Delaware Valley College

700 E. Butler Ave.

Doylestown, PA 18901

215-489-2312

EllisM@devalcol.edu

Since its inception, Delaware Valley College has been committed to applied learning. The Employment Program, an experienced based graduation requirement, provides the structure for meeting this commitment. Its purpose is to foster the integration of theory and practice throughout the students' educational continuum, and to help them develop linkages with professionals in their fields of study. All bachelor's degree candidates are required complete 960 hours of hand-on field experience in a position(s) directly related to their major field of study. Students must regularly submit progress reports and complete a Capstone Project once the experience has been completed. For this, they receive four academic credits. The Employment program also benefits DVC faculty who participate in the site-visitation process. They have come to recognize this as a valuable outgrowth of the program: it allows them to remain current with and connected to professionals in their fields. The Program is administered through the Office of Career & Life Education in conjunction with the various Department Chairpersons. The Employment Program empowers students by equipping them with the skills and abilities necessary for success as they transition from College to Career and provides employers with a highly skilled labor force.

Landscape Construction Presentation

Howard L. Eyre

Dept. of Ornamental Horticulture and

Environmental Design

Delaware Valley College

700 E. Butler Ave.

Doylestown, PA 18901

Construction is the application of Mathematical Principles. To that end, the course work is presented not in the form of building from plans, but by having students analyze a situation and determine the parameters that will influence the creation and implementation of a final design. This technique is implemented for all aspects of Landscape Construction.

Practicing What We Preach: Using Case Studies to Facilitate Problem Solving

Gary M. Fortier

Delaware Valley College

Dept. Small Animal Science

700 E. Butler Avenue

Doylestown, PA 188901

(215) 489-4890

fortierg@devalcol.edu

Case studies have long been employed in several academic disciplines, particularly business, law, and medicine. Real cases are now being employed across a much wider array of subject areas, however, many instructors may be unfamiliar with the use of this pedagogical tool. Case studies often consume a significant proportion of classroom time, but they can effectively develop a number of problem-solving skills, such as interpreting data, identifying assumptions, and evaluating experimental designs. Studies based on "real-life" dilemmas can also illustrate the complexity of policy decisions and the need to reconcile multiple points of view. Case studies can present some new difficulties to the instructor, as both students and faculty adapt to changes in their respective roles. We will review the advantages and disadvantages of integrating case studies into an undergraduate lecture course. An abbreviated example will be taught to illustrate how cases can be incorporated into the curriculum.

CREAM: Experiential Learning about Cows and People

*Jim Gilmore
Department of Animal Science
University of Vermont
Burlington, VT, 05405
802-656-0144
James.gilmore@uvm.edu*

Since 1988, a team of 15 students each year has been cooperatively managing and operating a 30 cow registered Holstein dairy herd at the University of Vermont. Although CREAM (Cooperative for Real Education in Agricultural Management) was designed by students to give a largely urban group hands-on learning about dairy cattle, the experiential learning about themselves, teamwork, communication, peer evaluation, leadership and problem-solving is the heart of the program. Much of the learning takes place during 4 hours of business meetings and 2 hours of committees during 3 evenings each week. The groups are divided in half for production and breeding committees one night and projects and finance another night. A faculty advisor, 2 farm advisors, committee advisors and a CREAM Advisory Board of Vermont dairy leaders are valuable resources for the students. Final responsibility for management decisions, however, is given to the team of students. Each student documents his or her learning in a weekly email to the faculty advisor. Student-directed learning is motivated by each student's responsibility to the welfare of the cows, other members of the group, and the success of the business.



Use of an Equine Breeding Facility in Undergraduate Education

*Fredrick Hofsaess, Ph.D.
Animal Science Department
Delaware Valley College
700 E. Butler Ave.
Doylestown, PA 18901
215-489-2321
HofsaessF@devalcol.edu*

The Delaware Valley College Standardbred breeding herd, consisting of 15 broodmares, three stallions, and youngstock are utilized in teaching a Stable Management course (Fall) and Breeding Management course (Spring).

Facilities available include a 13-stall barn, adjacent stallion barn with 5 stalls and semen collection phantom, and a fully equipped laboratory for semen processing. Two foaling stalls are equipped with closed circuit TV. Two run-out sheds, capable of holding 8 horses each, are in close proximity to the main barn.

With faculty supervision, students manage the facility in two-week rotations. Groups of 3-4 students are randomly assigned to various weeks during the course of each semester. Groups are responsible for feeding, turnouts, stall cleaning and general health observation. Faculty grade the overall condition of the facility while managed by each group, and individual group members grade the work ethic of their peers. Normally sufficient horses are available so that each student, in a course, is assigned a care horse for the semester.

During the fall, formal labs are conducted weekly on topics such as handling and restraint, grooming, vaccination, vena-puncture, paste deworming, foot trimming, tooth care, first aid, bandaging, trailer loading, etc. During the spring semester participants are involved in teasing, semen collection and evaluation, mare insemination, foaling, and newborn foal management.

Students are aware that these courses require a commitment outside of regularly scheduled class hours before they enroll in either course. As a result, students accept the responsibility and time commitment. The concept of running a facility without continual oversight by a faculty member appears to be appreciated by class participants. They are free to select the team members of their group and have a degree of flexibility in scheduling their time in the barn. Morning feeding must start between 6 and 8 AM, with evening feedings between 3 and 5 PM. For safety, at least two group members are required to be at the barn for each

feeding; however the actual scheduling is left to the students. In almost forty continual semesters of operating the facility in this format, only a handful of instances have occurred when group members failed to appear at there scheduled time.

Several benefits result from management of this facility as outlined above. The same faculty member who manages the facility also teaches the Stable Management and Breeding Management courses. Therefore, continuity is maintained between the lectures, laboratories, and actual facility management. Students benefit by being dependant on and working with fellow classmates, experiencing varied weather conditions, and handling a variety of horses. The courses go beyond the traditional classroom/field trip format and provides the student with an opportunity to apply their knowledge in practical hands-on situations.

Perceptions of Youth toward the Achievement Program in the Florida State Fair Junior Livestock Program

Tracy S. Hoover¹ and Sandra H. TenBroeck²
*¹Associate Professor, Agricultural Education &
Communication*

*²Associate Professor, Animal Science
University of Florida
PO 110540
Gainesville, FL
32611-0540
352-392-0502
tsh@gnv.ifas.ufl.edu*

In 1998 the Florida State Fair phased out the traditional market animal auction associated with the Junior Livestock Show. The Achievement Program was implemented to reward youth for participation in educational events and exhibiting livestock. Participation in these events accumulates as points, which are translated into premiums. This study gathered perceptions of youth livestock exhibitors toward the program.

In 1998, 337 and in 1999, 351 youth participated in the program. During the past two years, beef breeding had the largest and dairy goats the least number of entries. Seniors represented the largest number of entries for both years. Participants listed three things they liked the best

about the program. Participants in both years indicated they liked the chance to earn money/achievement points, the educational aspect/chance to learn and skill-a-thon as top components. There was a difference in rankings of items liked best by previous state fair participation. Youth who did not previously participate ranked the educational/opportunity to learn aspect of the program most frequently. Youth who did previously participate in the state fair ranked the opportunity to earn money/points most frequently. State specialists will use the results to develop in-service programs for agents, 4-H leaders and agricultural education instructors.

Diversity Experiences Take Agriculture Educators Out of Their Comfort Zone

Dr. Patreese D. Ingram
Assistant Professor of
Agricultural and Extension Education
412 Agricultural Administration Building
The Pennsylvania State University
University Park, PA 16803
(814) 861-7439
pdi1@psu.edu

Today's college graduates will work in a more diverse society than those of previous generations. While the ability to relate effectively with diverse types of people is becoming an important employment skill, many people are uncomfortable around people who are different from themselves. Colleges and universities can provide opportunities to increase students' comfort level with diversity, thereby better preparing them for the changing workplace of the future.

This paper describes the learning experiences of Penn State University students who participated in a one-week summer class targeted to high school agriculture teachers, the majority of whom were working on master's degrees or completing teacher certification requirements. An important part of the class included participation in diversity-related experiential activities that took students outside of their comfort zones. Students selected experiences that related to people with physical and mental challenges, people from different races and ethnicities, those that speak a different language, older people, those with different religions, and those with different sexual

orientations. Stepping out of their comfort zone, for even a short period of time, resulted in valuable learning experiences for students. Suggestions are offered for expanding this type of experience to provide even richer learning opportunities for students.

Prior Experience, Perceived Usefulness and the Web: Factors Influencing Adoption of Internet Communication Tools

*Tracy Irani, Assistant Professor
University of Florida
Department of Agricultural Education
and Communication
P.O. Box 110540
Gainesville, FL 32611-0504
352-392-0502
Irani@ufl.edu*

The ability to communicate interactively is often perceived as an advantage of the World Wide Web, and, as such, represents a potential opportunity for the instructional setting. Adoption and usage of Internet communication tools such as email, bulletin boards and discussion forums may, however, be impacted by a variety of factors that affect perceived usefulness, the degree to which a user believes that using a technology will be beneficial in some way. Previous research suggests that prior experience and innovativeness are factors that may affect adoption behavior of technological innovations.

Using the Technology Acceptance Model as a theoretical framework, this study was designed to examine the effect of experience and degree of innovativeness on intent to use Internet communication tools. Results indicated that respondents who had prior experience and those who scored high in degree of innovativeness had the most favorable perceptions of the perceived usefulness of these technologies. Further, those subjects who had high levels of experience and perceived usefulness were most likely to use Internet communications technologies, while those subjects who scored low in both of these areas were least likely. Regression analysis indicated that, for all subjects, experience and perceived usefulness were the strongest predictors of behavioral intent.

A Byte of the Future: “Computerized” Service Learning

*K. Dale Layfield, Assistant Professor
Biology Instruction and Agricultural Education
Clemson University, 109 Barre Hall
Clemson, SC 29634
(864) 656-5676
dlayfie@clemson.edu*

In the past decade, computer skills courses became a necessity in colleges of agriculture throughout the US. Answering the need of a changing workforce in agriculture and natural resources, colleges of agriculture now offer hands-on computer experiences for agricultural students incorporating laboratory-based agricultural computer courses in the curriculum. However, as universities seek community-based opportunities for students to apply their knowledge, models that include activities such as service learning can offer added experiential components. Agricultural Applications of Microcomputers at Clemson University (AGRIC 200) is one course that is “testing the waters” of service learning. In cooperation with local youth organizations (FFA and YMCA), students worked in groups with a YMCA Director and agriculture teachers from three schools. Students met with the program leaders to determine specific computer-related needs, discovering opportunities to teach skills in a presentation graphics program and Web page construction/design. A major component of service learning, reflection, gives students the chance to assess psychomotor and affective development. Students used the Web course management software (WebCt) bulletin board to develop a progressive journal for reflection purposes. At the end of the semester, student perceptions toward the service learning activity and efficacy of the component for the course were measured.



Experiential Education Is The Heart And Soul Of The Washington Tree Fruit Program

K. Mullinix¹ L. Garcia² and R. Gillespie²

¹Washington State University

*Department of Horticulture and
Landscape Architecture*

WSU Learning Center

1300 5th Street, Wenatchee, WA 98801

(509) 662-2660

mullinix@wsu.edu

²Wenatchee Valley College

Agriculture Department

Wenatchee, WA 98801

Experiential education is an integral and substantial component of this undergraduate program of study which is designed to prepare leading horticulturists for tree fruit industries. Reflecting the thinking that utilization of knowledge represents the highest level of academic achievement and that Pomology is art as well as science, synthesis, integration and application of knowledge via experiential education is the preferred teaching/learning strategy. Throughout the curriculum, which emphasizes a whole agri-system philosophy are innovative and linked experiential education elements focusing on a breadth of subject areas including orchard horticulture, financial analysis, soil, water, IPM, human resources, fruit packing/sales, agroecology and on-farm research. Experiential studies emphasize the acquisition and development of professionally valuable knowledge and skills. Students commercially operate a fifty-five acre teaching orchard. Industry internships enable students to experience various phases and components of the tree fruit industry. Contrary to conventional wisdom the preponderance of experiential studies, including internships, is pursued during freshman and sophomore year studies. This strategy, we believe, provides a substantive basis for and thus elevates advanced studies out of the realm of the abstract and obscure. Undoubtedly curricular emphasis on experiential education distinguishes this undergraduate production agriculture program and largely accounts for worldwide recognition and graduate success.

A-Day at Delaware Valley College

Lisa Munniksmas, Class of 2000,

Co-chair of A-Day Committee 1999-2000

Delaware Valley College

700 E. Butler Ave.

Doylestown, PA 18901

ADAY@devalcol.edu

A-Day is an annual event hosted by the students of Delaware Valley College. It is held the last weekend of April, rain or shine. The event is totally coordinated and run by a team of students who are advised by a panel of three faculty, staff, or administration members.

A-Day showcases the students' accomplishments over the past year with livestock, dairy, horse and flower shows plus student club exhibits and demonstrations in a country fair type setting. Featured attractions include a craft show, equipment display, hayrides through the College's orchards and farms, pony rides, a barnyard exhibit, contests of skill, and a variety of food prepared by the student clubs and organizations. In addition, there is always musical entertainment on the main stage from the DeVal band and chorale and other talented musicians. Thousands of visitors bring their families to A-Day during the weekend to enjoy the many activities.

All of the proceeds from the event go directly to student scholarships and the student clubs and organizations participating in the weekend. A-Day is the largest fundraiser that the College's clubs and organization participate in all year.

Using Technology to Improve Traditional Classroom Materials

Rick Parker, Division Director

College of Southern Idaho

315 Falls Avenue

Twin Falls, ID 83301

208-436-0692

ricpar@cyberhighway.net

Besides being able to alter classroom delivery methods, technology enhances traditional materials and activities used in the classroom. Technology can be used to improve handouts, student class notes, charts, graphs,

writing, transparencies, tests, quizzes and outside readings. This session will demonstrate how to improve these traditional classroom materials and activities using technology. The technology demonstrated will include scanning, templates, wizards, linked objects, and hyperlinks.

**Biological and Agricultural
Significance of Tree Canopy
Microclimates:
Participatory Research Favors
Motivational Learning**

G.A. Picchioni
Department of Agronomy and Horticulture
New Mexico State University
Las Cruces, NM 88003
(505)646-1820
gpicchio@nmsu.edu

Growth and performance of a mature tree varies strongly among the diverse light microenvironments within its canopy. An effective teaching exercise to convey this biologically and agriculturally important principle to horticultural students is lacking. We developed a simple participatory learning approach to teach the importance of light microenvironment in the dense canopy of a mature pecan tree. Easy-to-perform (computer-aided) regression analysis reveals the importance of light exposure as a predisposing factor controlling pecan nut quality and nitrogen (N) allocation. Analysis also exposes students to statistical complexities in determining major sources of variation in tree performance attributes ("masking" of one independent variable by another). The exercise enables participatory learning in the scientific method, including collection and processing of field samples, statistical analysis, data interpretation, and hypothesis testing. The self-generated findings induce a sense of ownership among students, resulting in positive learning outcomes and strengthening the match between teaching and learning styles above the traditional classroom lecture approach. Depending on tree species, the work can potentially provide an experiential and motivationally-based setting that addresses a deficit in the scientific literature, in this example with pecan trees. The exercise is simple, inexpensive, completable within a semester time-frame, and broadly applicable.

Teaching Improvement Through Faculty Externships

*Stephen C. Ridley, Lewis C. May,
Roger A. Swanson, P. Lanny Neel,
and Jerome A. Nechville*
*College of Agriculture, Food and
Environmental Sciences*
University of Wisconsin-River Falls
410 South Third Street
River Falls, WI 54022

Teaching faculty members remain current in their fields, but few have the opportunity for extended experiences with the businesses and agencies that typically employ their graduates.

In an attempt to address this issue, a Faculty Externship Program was initiated with the assistance of a USDA Challenge Grant in 1998. The objectives of the externship program are (1) to develop faculty members with recent, first-hand industry experiences, (2) to infuse knowledge acquired from externship experiences into college courses, (3) to expand and deepen linkages between the college and businesses, and (4) to institutionalize the externship program as a vital and continuing feature of faculty development.

Since the inception of the program in 1998, four faculty members from 3 departments have participated in eight week externships. The participants provide comments on their experiences and describe the results in terms of course improvements, including the development of case studies (Neel), a nutrient management plan (Swanson), a capstone project for a course in Agricultural Engineering Technology (Nechville), and an illustration of the importance of basic knowledge of economics in making decisions in agricultural business (May)



Industry on Campus A Partnership to Bring Cutting-Edge Technology to the Students

*Gordon Roskamp¹ John R. Anderson, Jr.², and
Dan Zinck³*

*¹Professor, Department of Agriculture
Western Illinois University
Macomb, IL 61455. (309) 298-1569
gk-roskamp@wiu.edu*

*²Technology Development Specialist, Monsanto
Company
1609 Iredell Drive, Raleigh, NC 27608
(919) 821-9295*

john.r.anderson@monsanto.com

*³Agronomic Systems Manager
Monsanto Company*

*17500 N. Salem Rd., Canton, IL 61520
(309) 668-2475*

daniel.l.zinck@monsanto.com

Biotechnology in Agriculture was taught in a 12-week, two semester hour course at Western Illinois University by eight Monsanto scientists. Topics included technical information on gene transfer, plant breeding, seed production, genomics, and molecular breeding in agronomy as well as animal applications, regulation, ethics, global issues, and the business of biotechnology. PowerPoint was utilized and students were given a copy for note-taking during each presentation. Assignments were an elevator memorandum, a case study presented by student teams, an exam taken on CD-ROM, and a take-home final exam. Students evaluations indicated that the technical information was excellent and scientists were all eager to teach and answer questions. In most instances, the scientists were sensitive to the varied backgrounds of our undergraduates and gave basic information before approaching difficult material. Some students still complained that the information was too difficult. Many students felt the course was too rigorous for a two semester-hour course at the 200 level. There was some redundancy among speakers. Previous presentations will be sent to subsequent speakers in the future. Students expected testing on rote memory of technical information instead of critical thinking, and several did not receive the grade expected.

Teaching Students to Think Critically in and about Agricultural Disciplines

*Rick D. Rudd, Assistant Professor and Matt T.
Baker, Associate Professor*

*Agricultural Education and Communication
University of Florida*

Room 305 Rolfs Hall, POP Box 110540

University of Florida

Gainesville, FL 32611-0540

352-392-0502

rrudd@gnv.ifas.ufl.edu

Critical thinking is a skill that most faculty members would readily agree is important for students to develop. Employers and society want our graduates to be able to make good decisions on the basis of sound reasoning and technical expertise. Our graduates are expected to be able to decipher relevant information from irrelevant, make decisions with limited information, and be able to defend their decision on the basis of sound reasoning. Unfortunately, many of our students have poorly developed critical thinking skills (Rudd, Baker, Hoover, Gregg, 1999). Perhaps the problem is rooted in us, the faculty. Do faculty members understand the concept of critical thinking well enough to teach students to think critically?

The authors examined current literature from education, philosophy, and psychology in an attempt to define critical thinking for faculty members in schools and colleges of agriculture and to offer a primer for discussion of strategies for teaching critical thinking. This presentation includes a conceptual model for the teaching of critical thinking as well as concrete examples of teaching strategies that can be used by faculty members in any agricultural discipline to teach students to think critically in and about their discipline.



Scripts, Sexual Attitudes and Agricultural Students: Immediate Involvement for Maximum Investment In an Applied Psychology 100 Course

*D. Elder Stewart
The Ohio State University
Agricultural Technical Institute
1328 Dover Road
Wooster OH 44691
(330) 264-3911 x 1322
stewart.11@osu.edu*

Students make decisions about whether to participate in a class early in the term. Most choose to show up but not get too involved. Hence, students are determining neither to have the fullest experience nor to expend optimum effort and energy.

The most important question the Personal Relationships course at an agricultural school asks is, "Why do people do the things that they do?" Students' main concern is "How am I alike and different from others?" They begin to discover their answers by involving them immediately, inviting them to offer personal knowledge and opinions about sexual attitudes and choices. This, then, leads into a written self-discovery assignment.

At the first class, students arrive to find an overhead inquiring, "HOW RELIABLE ARE CONDOMS?" After introducing themselves to three neighbors, they are invited to the front of the room where they participate in a continuum exploring sexual attitudes and values. Next in threes, they discuss a sexual scripting handout which we then discuss as a class. Finally, students fill out a rapid feedback form, which asks, "What are two things you learned today? What could be clearer?"

This demonstration explores teaching methods that encourage students to stay involved in their learning.

Undergraduate Learning Styles and Critical Thinking Skills

*Rick D. Rudd, Assistant Professor and
Matt T. Baker, Associate Professor
Agricultural Education and Communication
University of Florida
Room 305 Rolfs Hall, POP Box 110540
University of Florida
Gainesville, FL 32611-0540
352-392-0502
rrudd@gnv.ifas.ufl.edu*

Much work has been done with students in colleges of agriculture across the country to assess learning styles. Although this work has been an important point of departure for further research, very little research has been conducted outside of describing various populations of students. This study attempted to examine the presence of absence of relationships between student learning styles and student critical thinking dispositions. Preparing students to think critically is a goal of many professionals in higher education. Critical thinking is also a quality sought by employers of college of agriculture graduates. If relationships exist between a student's learning style and the disposition to think critically, college faculty may be able to facilitate the development of critical thinking skills in students by utilizing this information.

The researchers tested over 500 College of Agricultural and Life Sciences students at the University of Florida. The students represented 12 different discipline areas of study within the college. The California Critical Thinking Disposition Test was used to assess critical thinking disposition and the Group Embedded Figures Test was used to assess learning style. Student learning styles were compared with critical thinking disposition within and across disciplines.

*The Future at Hand:
Experiential Learning for the Next Millennium*

Agricultural Students and Service Learning

*D. Elder Stewart and Linda Houston
The Ohio State University
Agricultural Technical Institute
1328 Dover Road
Wooster OH 44691
330-264-3911*

stewart.11@osu.edu and houston.1@osu.edu

Service Learning, a thirty-six year old educational construct, is an experiential learning strategy that develops a habit of critical reflection about their actions. Service Learning involves students in ongoing community projects related to their class work while preparing them to be productive citizens as they come face to face with real social, political and economic problems and are actively involved in alleviating them.

With clear guidance and in approved placements, agricultural students in Agricultural Communications and Introductory Psychology courses develop action plans, collect information about resources, predict outcomes, implement their plans, and reflect, analyze and report on the experiences. In the Adopt-a-Class, students develop agricultural lessons for classes at an inner city school. With frozen cow's ears the fifth-graders could handle and examine, they explaining herd identification and health and nutrition management. Another group encourage interest in 4-H, showing video clips of a cow's stomachs, quizzing the students on milk's and helping each make a serving of homemade ice cream.

This interactive presentation will examine beginning steps and setting up placements connected to course objectives and learning outcomes, highlight projects completed by teams of students, offer assessment measures, and discuss challenges and successes.

Recruiting Preprofessional Students into the College of Agricultural and Life Sciences

*R. Elaine Turner, Assistant Professor
Food Science and Human Nutrition Department
PO Box 110370
Gainesville, FL 32611-0370
352-392-1991, ext. 223
ret@gnv.ifas.ufl.edu*

Preview is the freshman orientation program for the University of Florida. Over a two-day period, incoming freshmen attend orientation sessions, meet with a faculty adviser, select a major and register for courses. Beginning in 1998, the College of Agricultural and Life Sciences (CALs) invited students with interest in pre-med, pre-dent and pre-vet programs, regardless of choice of major on their application, to participate in a special Preview session. 41 one-hour sessions were presented in 1998 and 1999 highlighting five possible preprofessional majors: animal science, entomology and nematology, nutritional sciences, microbiology and cell science, and wildlife ecology and conservation. A total of 647 incoming freshmen attended these sessions. 180 of these students had selected a CALs major on their application. Of these 180 freshmen, 159 (88%) enrolled in a CALs major. At the start of spring semester, 2000, 132 students were still in GALS (83%). The majority of the students (n=467), attending these Preview sessions had selected a non-CALS major on their application. 281 students (60%) selected a CALs major either at time of enrollment or in a subsequent semester; 213 (76%) of whom were still in the CALs in January, 2000. These Preview sessions have proven successful in attracting and retaining preprofessional students.



Course Restructuring for the Teaching of Critical Thinking

*R. Elaine Turner¹, Matt Baker²,
Rick Rudd³*

*¹Assistant Professor, Food Science and Human
Nutrition Department*

*²Associate Professor, ³Assistant Professor
Department of Agricultural Education
and Communication*

*University of Florida
PO Box 110370
Gainesville, FL 32611-0370
352-392-1991, ext. 223
ret@gnv.ifas.ufl.edu*

Both faculty members and those hiring college graduates agree that critical thinking is a desirable quality for students to develop. However, research indicates that seniors are not able to think critically. Colleges of agriculture have revised curricula adding capstone courses, minors, and interdisciplinary majors, but few changes have been made in instructional delivery. Faculty behaviors, actions, teaching techniques, and instructional aids influence whether or not students can think critically in and about their discipline. The purpose of this study is to describe a project underway in the University of Florida's College of Agricultural and Life Sciences designed to assist faculty in restructuring courses to promote the development of critical thinking. Fifteen faculty from four campuses, representing 10 academic disciplines are participating in a series of workshops in 2000, examining their courses for fundamental and powerful concepts, and restructuring class time and activities to foster critical thinking. At the same time, the following baseline information is being gathered and will be reported: critical thinking disposition, learning style, final exam scores, and an attitudinal assessment to determine the degree to which students perceive that the course was taught using the traits, elements, and standards of reasoning.

Enhancing Buyer/Seller Relationships in the Classroom

Mark A. Wade

*Assistant Professor, Food and Resource Eco-
nomics*

University of Florida

*2199 S. Rock Road, Fort Pierce, FL 34945-
3138.*

(561) 468-3922

MWade@gnv.ifas.ufl.edu

Part of moving young minds from a dualistic intellect to a more relativistic stage requires that the student accept that what is being taught has value. This transaction occurs when the learner makes a rational decision to exchange dollars, time and energy for the knowledge offered by the instructor. As in any relationship between buyer and seller, the transaction requires that a level of receptivity be created so that features, advantages and benefits of the transaction can be examined. This research examined student response to instructor efforts to create a vested covenant in the classroom. Teaching methods were altered in two of four course sections taught by the same instructor during the same semester. At the conclusion of the semester, course and instructor evaluations were conducted in each section. Student grades, section grade point averages and average attendance rates were derived. Significant improvements in all categories were identified when efforts were made to gain student ownership of the class. When we "sell on purpose," great care is taken to create a receptive environment so that a mutually beneficial level of trust can be established. By introducing these concepts into the classroom, in effect "teaching on purpose," a win-win transaction occurs.