

- Crop area in the northern states may expand somewhat.
- Higher temperatures will enhance the winter survivability of pests and diseases, thus reducing crop and livestock output.
- Frequency of crop failures will probably increase.

#### Economic Impacts on the U.S. Farm Sector

- Decreased yields will reduce supply, increasing crop prices and income.
- Need for farm price and income support will decrease.
- Livestock income will be pressured by higher feed grain prices.
- Need for disaster relief programs will increase due to more frequent occurrence of extreme weather.
- Pesticide and livestock drug use will expand, thereby increasing the cost of production.

#### Conclusions and Recommendations for Farmers

- While global climatic models suggest some form of greenhouse effect is probable, its impact on the weather in general and U.S. agriculture in particular is difficult to forecast.
- Farmers should support research on the greenhouse effect and development of heat, drought, and insect resistant crops as a precaution.
- Farmers should watch for an increase in extreme weather conditions, which is consistent with most current forecasts of a greenhouse effect.

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# Teaching Creativity for Professional Growth and Personal Reward

Gary A. Anderson

*The subject of developing student creativity is presented based on a model floral design program offered at a two-year technical college within a major university. Specific techniques and factors within the teacher-learning environment are identified as contributing to the enhancement of creative abilities. Students in programs with an emphasis on creative development experience professional and personal rewards.*

## Introduction

Nearly everyone enjoys the thought that they have an element of creativity among their list of talents. This idea, often reinforced by friends and relatives, is a major factor which motivates students to pursue a career in floriculture. What these students may likely not understand at the time they begin their education, is that there are various levels of creativity that they will achieve. Only after they have attained a higher level, are they aware of the personal and professional rewards that are associated with creative development.

## Establishing Programmatic Goals

Creativity can be taught in the classroom. Creative thinking should be an important goal of all programs. However, creativity in the artistic sense has special significance in the area of floral design. The extent to which it is developed and the speed with which it happens is heavily impacted by the faculty and the curriculum. Sporadic attempts to introduce students to new levels of creativity is less effective than frequent contact in a logically developed program. A successful model exists in the Floral Design and Marketing Program at The Ohio State University's Agricultural Technical Institute (OSU/ATI). This two-year technical program within the College of Agriculture has a record for fostering creative talent and producing successful floral designers.

Students begin the program with a basic floral design course which provides two hours of lectures and six hours of laboratory experience weekly. Each subsequent quarter offers at least one design course. Students progress through classes in commercial design, wedding design, contemporary floral design, retail flower shop operation and plants for interior decoration. In addition, at least two quarters are spent in a practicum course to elaborate on recently acquired basic skills. Part way through the program, each individual completes an occupational internship which is accomplished by working full-time in a flower shop under the tutelage of an experienced flower shop manager. The logical and sustained

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sequence of instruction provides a framework within which creative ideas can develop and flourish.

## Teaching Strategies

Specific classroom techniques which have proven successful in the floral design program at OSU/ATI include the following.

### **The instructor serves as role model.**

Often numerous options related to flower selection or container choice are made known. The instructor verbalizes the rationale for specific selections as the design is assembled. This reveals the instructor's thought patterns and lays the ground work for creative decision making on the part of the students.

### **Students are involved in the thought process.**

The instructor presents many ingredients to a situation which has many possible solutions. After being given basic guidelines, groups discuss options, pool their collective thoughts and arrive at a decision which is unique to that group. The following example would be appropriate when teaching a lesson on color. Lay out an assortment of objects such as flowers, ribbons, candles and pieces of fabric, of widely varying colors. Encourage groups of students to select representative combinations of various color schemes. This gets them actively involved in the decision making process. Since there are innumerable right answers, there are many delightful combinations beyond those which are most obvious. A similar technique can be used to develop specific holiday themes or decorator themes for vignettes or window displays.

### **The instructor monitors student development.**

Teaching creativity involves more than just turning students loose with an endless array of choice and saying "be creative". On the contrary, it takes consistent and diligent work on the part of the instructor to critique, make suggestions and challenge the students in a positive way. It involves methodical development of a firm foundation in the time tested principles of design and careful evolution of basic skills.

### **Students are exposed to many different ways of thinking.**

The more ideas the students are exposed to, the more likely then will be to draw on bits and pieces of these and reformulate them in new ways. Ideas from historical or period designs are valuable, since classic ideas stand the test of time and interesting design concepts tend to be recycled over time. Contemporary ideas, usually found in current periodicals reflect the creative genius of the moment. These ideas are a valuable pulse of those striving to do something without precedent and achieve a look that reveals truths of today's society. The student will be challenged to amalgamate these ideas of past and present into a statement consistent with regional preferences and life styles.

### **Students are introduced to the international arena of design.**

The world is full of rich ideas which are new to many students. Design trends are influenced by global events. For example, as world attention focused on Eastern Europe,

designs from that area began replacing the soft flowing realism that had previously been in vogue. The possibilities for incorporating these foreign motifs into traditional American design presents new possibilities for creative expression. **Students have direct exposure to creative professionals.**

Guest artists can inspire students to higher levels of accomplishment. For example, the OSU/ATI floral design program has hosted several renown designers under the Artist-in-Residence program sponsored by the American Institute of Floral Designers. One of these was German designer Gregor Lersch. Over a two-day period, Lersch exposed students to his creative genius. After he left, students were motivated to emulate his style. The result was not a reproduction of his work, but some new and exciting combinations which were sparked by his visit.

### **Students compete for local and national honors.**

Design competitions in the classroom and at special events can encourage creativity. When students are given themes or titles to interpret, they venture into a new realm of thinking. The results are often surprising and original as they amalgamate their newly researched ideas with the known world of their past experiences and currently available resources. Competition viewed by the public, such as that held during the annual OSU/ATI spring flower show, is used to determine eligible members of the student chapter of American Institute of Floral Designers. It is one step toward competition with students from other colleges at the national symposium.

### **The instructor uses a variety of methods to critique accomplishments.**

Evaluation is another opportunity to set the stage for future originality. Positive suggestions can trigger new thoughts which may show up in student work in the forthcoming weeks. Using students to evaluate each others work may cause them to give more thought to the elements of a design that can be varied. Outside evaluators can also offer new ways of looking at familiar combinations, creating sensitivity to the way customers may perceive their work.

## Rewards and Benefits

The college experience should include an opportunity to discover one's potential and achieve higher levels of creative expression. The extent to which this happens depends on the curriculum and the commitment of the faculty members to nurture this development both in and outside the classroom. The learning environment as reflected by the classroom and campus setting, supportive extra-curricular activities and the advisor/student relationship all impact the total educational mission of developing creativity.

Students who progress to higher levels of creativity attain self-satisfaction that motivates them to continue striving for even more creative ways to express themselves. Employers of these students are beneficiaries of the process because they have an employee who feels good about themselves. Their ability often is transferred over into an increased desire to serve customers and create for them something unique and specially suited to their situations and aesthetic preferences.

(continued on next page.)

# INSTRUCTIONAL MEDIA REVIEWS

Victor A. Bekkum, Chair  
Instructional Media Review Board  
Agricultural Engineering Department  
Iowa State University, Ames, IA 50011

## Fall Color in the Landscape

Jeff Iles  
Extension Horticulture  
Iowa State University  
Ames, IA 50011

*Fall Color in the Landscape* is an 80 color slide-tape set. The primary objective of the slide set is to illustrate the fall color characteristics of specific plants in the landscape. In addition, secondary objectives are to depict the aesthetic benefits and a few basic principles of plant physiology.

### Review Summary

The quality of the slides and cassette tape was excellent. The reviewers felt the instructional objectives were met very well. The graph represents the average rating of the reviewers.

	Excellent	Good	Fair	Poor
Picture Quality	X			
Sound Quality		X		
Editing	X			
Content		X		
Currentness	X			
Organization		X		
Accuracy	X			
Vocabulary	X			
Interest		X		
Technical Quality	X			
Overall (Average of Reviewers)	X			

### Summary Remarks

#### Content Panel Member

This is an enjoyable introduction to using plants to enhance landscaping with an eye to fall colors.

Richard Waldren  
Associate Professor  
University of Nebraska-Lincoln

(continued from previous page.)

Yet the biggest and longest lasting benefit to students from achieving higher levels of creativity is the application that can be made to daily living and the potential for the heightened enjoyment of everyday life.

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#### Content Panel Member

The audio/slide set reviewed should be a useful tool for illustrating fall landscape coloration in Iowa and similar regions in the Midwest. The media is suitable for a High School ornamental horticulture class, and introductory horticulture class at the College level or an Extension presentation to a community garden club.

The slide set provided good visual examples of plants in fall color and the audio portion was pleasant and informative. However, the narrator rushed specific passages preventing adequate viewing of some slides. This could partially be attributed to some slides having shorter descriptive phrases. The inclusion of an informational sheet with common name, scientific name and fall color attributes of each plant for photocopying/hand-out to viewers would be an excellent addition to this media. The general organization of the audio/slide set was fine, but plant coverage was disproportionate at times.

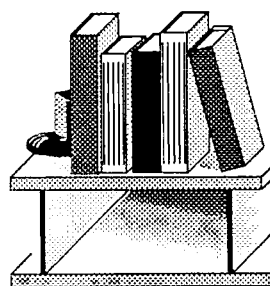
Overall, the audio/slide set was good. And, given its potential usefulness, should compensate for the weakness mentioned above.

Foy D. Mills  
Assistant Professor  
Abilene Christian University

#### General Panel Member

The slides and cassette tape are extremely well done. The script is accurate and presented well. An educational manual accenting what the student will learn in each plant category would be an asset to the materials. I see the value of the slide set now as an aid in presenting a program on the topic.

Doug Pals  
Professor  
University of Idaho



# Book Reviews

Wayne L. Banwart, Book Review Editor  
Department of Agronomy  
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Donald M. Elkins. *Crop Science Laboratory Studies*. Iowa State University Press. Ames. 1990. 175 pp. Paperbound \$19.95.

This book is designed for use as a laboratory and field manual for an introductory-level college course in crop science. The fifteen exercises may be used in a traditional laboratory setting or they could be easily adapted to self-instruction or they could be used individually as assignments in non-laboratory courses.

The exercises range from "Agronomy Field Day", which is basically an observational exercise, to "Agronomy Seminar", which asks the student to read an article and present it orally before an audience as well as field questions. Between these first and last exercises are several exercises involving identification of crop plants, seeds, weeds, insects, and diseases; one exercise demonstrating research methods and techniques; one exercise covering crop plant classification and geographic origin; one exercise dealing with grain grading and judging; one exercise exploring seed viability and germination; one exercise tracking seedling anatomy and development; and one exercise relating soil and plant tissue testing.

I like the inclusion of the research methods and data collection techniques. Some lab manuals (or their authors) seem to either take this information for granted or consider it irrelevant for an introductory-level course.

I like the tissue and soil testing exercise in this manual. This exercise is usually included in a soil science lab manual but not always in a crop science lab manual. It should be helpful in relating the two areas of study as well as explaining sampling technique and the limitations of "quick" tests.

Many excellent drawings and black-white photographs are used in the identification exercises. However, the author always leaves room for additional materials to be added to enhance the laboratory experience.

Much to my delight, I found no errors in spelling or grammar. This seems to be a rare quality in recent years in the book publishing industry. Dr. Elkins and his editor and publisher are to be commended for this aspect as well as the