

Individualization of Instruction Through Out-of-class Project Design

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Abstract

Personalized systems of instruction (PSI) generally require course restructuring and facility changes. Personalizing out-of-class projects can eliminate the need for major changes, yet still accomplish some of the important educational objectives of PSI.

At Virginia Tech's most recent College of Agriculture and Life Sciences Fall Instructor's Conference, I had the pleasure of co-conducting a series of workshops entitled "Types of Exams and Analysis." One often underrated area of analysis that we included - the out-of-class project - has been a particular point of interest and concern for me during my teaching career. With teaching priorities centered on such matters as syllabus, lecture and test preparation, projects are apt to fall susceptible to hurried planning, marginal creativity, and at worst, total omission from course structure. Granted, not all courses lend themselves to the project approach, but I contend that a well-administered, out-of-class student project can stimulate gratification in one appealing aspect of a course. This can provide an avenue for enhanced motivation, identification with other aspects of the subject material, and enduring interest beyond the period of the course.

My most serious efforts at project design have been in my two courses in landscape plants. Since these students, many of whom will be entering the nursery and landscape industries, need to develop a sincere interest in plants to keep abreast of future developments in plant breeding and introduction, I feel that at least one area of each course must emphatically capture their attention. My project strategy, which seems to be accomplishing that objective, is presented here in hopes that it may be helpful to other agriculture teachers. Like any other technique, however, a project scheme must be molded and altered to fit one's own style and course objectives.

The most important underlying factor is the realization that each student has a unique set of interests and aptitudes. Any project type will fit only a segment of the class population. The classical term paper, for example, as flexible as it is in subject selection, weighs literacy and writing skills heavily, and works disadvantageously to students weak in those skills. Written expression is emphasized in my teaching to encourage both the proficient and deficient students in refining their abilities, but the literarily handicapped student should not be frustrated by an overemphasis of that area. As an alternative, I offer projects that emphasize other aptitudes such as manual

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dexterity, two-dimensional visual composition, and even performance of physical outdoor activities related to the class. Most of the students then feel they have been allowed to compete freely and without bias.

This personalizing of projects overcomes at least two obstacles to PSI — the need for major course restructuring and facility change. Although all of the advantages of PSI cannot be realized through projects, the cost/benefit ratio is excellent.

In my landscape classes, students are allowed to select one of five projects, each designed to utilize different talents. For students who want to concentrate on plant identification *per se*, a labeled collection of live twigs is maintained as a project throughout the quarter. Teams of participating students are responsible for collecting and periodically replenishing the twigs for a two week period. The value here is the reinforcement of having to revisit plants studied in lab, take cuttings, correctly label the specimen, and properly organize the collection. Evaluated daily according to established criteria, the twig collection is a visual indicator of the students' plant identification skills.

In the twig room is also located a cabinet containing herbarium sheets, supplied by student projects, of each plant covered in class. Enjoyed by students who like to work with their hands, the herbarium sheet project teaches students properly to collect, press, dry, and mount plant material. All necessary materials are provided for consistent final products, although creativity of arrangement is encouraged. A video tape is available to instruct students in the principles and pitfalls of preparing herbarium sheets. Evaluation is based on the following four criteria: 1) quality of the specimen collected and its dried condition; 2) aesthetic and technical quality of the mounted specimen; 3) accuracy of nomenclature and display of key identification features; and 4) adherence to labeling, covering, and other project specifications. Each project is given a numerical score based on these criteria, ranked, and assigned a grade accordingly.

The students who know, or are willing to learn, the basics of photography may use that medium of observation in the photography project. Encouraged to develop a theme in their work, the students must submit 20-25 color slides that are carefully packaged, labeled, and narrated according to specifications. Here, students not only observe the plants they shoot but gain experience in the idiosyncracies of capturing plant subjects on film. Evaluation here is based on effective and accurate communication of the subject, photographic quality, and the depth of observation into the topic selected.

For individuals who prefer writing, the education project allows investigation of a student-selected topic. The work must be illustrated, preferably with sketches, to develop observational skills. To ensure that literacy is stressed, the final submission includes the final draft, the rough draft, and a confirmation slip from our University

Writing Center verifying that editorial aid was given before the final copy was begun. Horticultural content and literacy considerations are the two most heavily weighted factors in evaluating the papers.

The fifth and final project involves working three hours per week at our arboretum which is undergoing renovation. Student teams work under the supervision of a technician who instructs them in plant culture and maintenance. Initially each team prepares a renovation or maintenance plan for a specified area of the arboretum, has it approved, and then executes it. Completion of the project allows them to see the fruits of their planning and effort, as well as to experience working as part of a crew. Students in this project are evaluated according to their level of participation and mastery of the practical skills employed in the project.

Problems of project supervision were solved by adding another opportunity for student experience. I now delegate authority to mature and academically superior students who help with the instruction and rough evaluation of the two most time consuming projects. The twig collection is checked daily by a student who evaluates the condition and accuracy of the labeled twigs according to a pre-determined check sheet. The herbarium sheet coordinator conducts material-gathering walks, distributes supplies, gives demonstrations, and ranks the completed sheets according to set criteria. Using the coordinators' evaluations and my own observation in both projects, I then assign final grades. The administration of these projects would be difficult at best without this delegation of authority.

Making the projects a real exercise, rather than academic, generates a high level of pride and quality in the finished products. Twig collectors know their work is benefiting other students as a study tool. Those making herbarium sheets know that some may be selected for the herbarium. Photographers see student work projected and acknowledged in class and realize that some of their quality work will also be shown. Each student, though working on a different project, knows that he or she is participating in developing and improving the course.

Ironically, there is always a good mix of students among the five projects. By capitalizing on the existing interest of students, my lecture abilities no longer bear the entire burden of generating a student identity with the subject matter. By allowing students simply to expand their own personal biases into the world of landscape plants, I am released from the more difficult and less desirable task of leading them into unfamiliar academic terrain without a point of reference.

As I continue to use and refine these projects, the results become even more satisfactory. Whether I become more organized each time around, whether the students come into the class better informed of the project expectations, or whether they are seeing what is being done and want to top the previous efforts, I do not know. Regardless of the cause, experience convinces me that

clearly and positively stated objectives and specifications, plus high expectations, are keys to pride of workmanship. Students will achieve, within reason, any standard of excellence we as teachers are willing to establish for them if we let them know their work is important to us and to the class.

Student projects do not solve all my problems of student motivation, but without them a very important dimension of learning, and a unique method of getting to know who students really are, would be missing.

MINUTES OF THE NACTA FALL EXECUTIVE COMMITTEE MEETING

September 25-26, 1980

The regular fall meeting of the NACTA Executive committee was called to order by President Stufflebeam at 2:30 p.m., on September 25, 1980. The committee met in the Student Union, Louisiana State University, Baton Rouge, Louisiana.

Executive committee members present were Stufflebeam, Miller, Brown, Everly, Stanly, Campbell, Blackmon and Stelmaschuk. NACTA standing committee chairman Craig and 1981 NACTA Conference local personnel Godke, Reagan and Lundergan, also, were present.

The agenda as prepared by the President was adopted. A copy is attached.

President Stufflebeam reported on his activities since the recent annual conference. It was suggested that all pertinent correspondence concerning NACTA policies, actions or activities initiated by any Executive committee member be sent to all other members.

The Vice President discussed the Thursday p.m. - Friday a.m. meeting arrangement. A consensus was that the split meetings were superior to an all-Friday meeting. He then presented his Vice President's report. A copy of the report as accepted, is attached.

A question was raised concerning the timeliness of appointing state coordinators in the Spring. It was agreed to strive for this in the future.

Secretary-Treasurer Brown reported that the current NACTA membership is 908. The current cash balance is \$5,050.58. He has recently submitted the annual 990 report to the IRS. A motion was passed to delete members from the roll in April of the second year for which they are delinquent. The Secretary-Treasurer's report was accepted as presented.

A motion was passed for the Secretary-Treasurer to issue an operating fund of \$400.00, at or shortly following the Annual NACTA conference, to the host Program Chairman for the following year's annual conference, to help underwrite "up front" costs.

Editor Everly reported that the September issue of the NACTA Journal will be mailed out September 30th. It will be 60 pages. The annual post office 2nd class permit audit is due to be conducted in October. An estimated net budget of \$7500.00 is predicted for the 1980-1981 issues of the Journal. The report was accepted as presented.

A report of the Book Review board from A.W. Burger, was given by Everly. A copy of the report was accepted, is attached. Recent activities of the Media Review board, also, were reviewed.

After the Editor demonstrated a unique ball point pen-pointer combination, a motion was passed to order 500 of the pointer-pens at an approximate cost of \$1.00/unit. They are to be imprinted "NACTA Points the Way" and are to be used for recruitment and for sale to members. Each new NACTA member is to receive a pointer-pen.

Historian Stanly presented his report. He indicated that he had received the archives from Carl Schowengerdt. Further, he suggested that NACTA Executive and Standing committee members route all important correspondence and documents to him for possible inclusion in the association historical records. His report was accepted as given.