Summary

Several PLATO lessons in forestry have been developed to provide students with an additional learning resource. The tree identification lesson helps students to study different tree species and their distributions. The lessons in forestry inventory will allow students to plan and conduct forest inventory on the computer; they can perform an entire inventory gaining valuable experience.

The use of the lesson Introduction to Forestry showed the potential of the PLATO system for public education and information.

References

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CASE STUDY

Grain Marketing Game

Ward E. Nefstead

Abstract

An instructional grain marketing game was developed to illustrate the trading environment facing producers and local elevator operators. A number of marketing principles are uncovered through student interaction.

This paper describes the experience of the author in the development and use of a specialized agricultural marketing game at a two-year technical college. The game was originally developed to simulate grain merchandising by country elevators. The game itself is a manual exercise involving a limited aspect of total elevator management. As a unit, it is similar to the grain division in a large country elevator and does not interact with the feed and other operating divisions of a modern elevator. The Purdue Farm Supply computer game would address this total situation much better (1).

The fact that the game is limited to one aspect of a total management situation does provide some direct advantages. First of all, losses in the grain enterprise cannot be offset by gains in another enterprise. Second, the activities performed will be less numerous and more well-defined. Finally, the activities can be tied to an ongoing set of real-world markets.

The Market Administrator

The market administrator must coordinate the entire operation of the game. This includes monitoring group activity to insure that rules are being adhered to and selecting a room which is conducive to maximum interaction. The optimum room arrangement is to have all market teams in one section of the room and the agricultural production teams in another section of the room. The market administrator can be located between the two areas, along with the appropriate materials. This location gives a good view of the operation of the game. An advantage of the game as presently developed is the small number of formal procedures which must be followed.

Students are generally responsible for filling out the required forms. One member of each market team - the Grain Accountant - performs the necessary financial calculations in each round. One member of each agricultural production team reconciles sales and expenses. These records are checked between rounds by the market administrator and available secretarial or student workers.

Each market team begins with an identical balance sheet for a typical grain elevator in South Central Minnesota. They must also reconcile the cash account with the opportunity of borrowing money available to them. Money is borrowed at the current market rate for the game, but the credit line is at the discretion of the market administrator.

Since the game is a manual simulation, a computer is not used as an integral part of the procedure. With a larger class size the financial records could be transferred to the computer with students doing the data input. Secretarial assistance is needed for the preparation of the data forms and also for validating the results of each round. The cost of conducting the game is approximately $50. This includes additional assistance in carrying out the game and the printed materials used. The time required of the instructor is approximately 20 hours with an additional 10 hours of in-class time to conduct the game.

The game is designed to be completed over a five-week period. This may be extended to the entire quarter (three months) if students have a working knowledge of the subject at the start of the class. Since students rely on a real-world set of markets, this length of time can produce considerable price variation.

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Description

The grain marketing game consists of several teams of students and the market coordinator (the instructor). Each team of students must play several roles: grain division manager, assistant division manager, grain accountant, market technician, transportation coordinator, and several members of an advisory committee.

A maximum size of eight people per group is suggested for each market team. Table 1 contains the form used by the market team.

In addition to the teams of students who are involved in grain merchandising, a set of teams also exists as a source of the grain supply. In each of these teams, the supply of grain and the cost of production are given to the team by the market administrator for each round. The information is contained on a form (Table 2). The maximum size of each agricultural production team is five people with one person designated the accountant. No limit exists for the number of either marketing or agricultural production teams with the exception of classroom area and accessibility of groups.

Beginning in a predetermined order, the teams of students representing elevators must then competitively bid the grain supply from producers. Carryover of grain is allowed for a maximum of two rounds after which the stored grain must be sold to meet expenses.

Table 1.

AGRICULTURAL MARKETING TEAM (ELEVATOR)

DATA FORM

ROUND _____

CREDIT LINE AVAILABLE:

RAIL CARS AVAILABLE:

GRAIN INVENTORY HEDGED:

BALANCE IN HEDGE ACCOUNT:

CONTRACTS SIGNED: _____-

_____BU. IN ROUND _____

_____BU. IN ROUND _____

Table 2.

AGRICULTURAL PRODUCTION TEAM

DATA FORM

ROUND _____

GRAIN:

GRADE AND LOCATION:

COST OF PRODUCTION:

SCHEDULED DEBT PAYMENTS:

INVENTORY REMAINING:

_____BU. IN ROUND _____

_____BU. IN ROUND _____

The grain purchased may be sold at any available location for which an open bid exists. Some of these bid locations are reported over the Grain Instant News system. Transportation costs must be paid and bills of lading issued to the sale locations. On a rail bill of lading, 80 percent of the cash proceeds are available immediately, with the remaining 20 percent becoming available in the next round.

Truck bills of lading involve a 100 percent advance in the current round. A list of rail car assignments by elevator is available during each round. Rail cars may be traded among elevators at any negotiated price. Trucks are uniformly available throughout the rounds.

Grain inventories may be hedged or unhedged. The game allows the option of contracted sales upon mutual agreement anywhere into the next round.

At the end of each round, the balance sheet and income statements are updated. The market coordinator also reviews the credit line available to the elevator and decides to expand or contract it.

At the end of the entire game, student teams are evaluated on the basis of their performance. Marketing students are judged on the net profit generated. The evaluation is made by placing teams into one of three groups: high, average, or low based on the net profit generated. Agricultural production teams are judged on the basis of the price received. Each team is placed in one of three groups: high, average, and low based on its performance. These three groups for each type of team correspond to superior, above average, and average grade levels.

Experience

This game was conducted several times in essentially its current version during Summer Quarter 1976, Winter Quarter 1977, and Summer Quarter 1977. As with any game involving manual simulation, the forms to be filled out required considerable explanation. After the initial introduction of the game and familiarization of students with their assigned roles, some interaction developed quite quickly. Students recognized very early the competitive aspect of the game and assumed different levels of aggressiveness. One group in particular became very aggressive in bidding after bidding too low in the previous round. All bidding occurs in relation to the Chicago Futures price of the commodity.

The agricultural production teams showed the tendency to hold grain inventories until one or more realized a net loss through storage. They perceived their role very well in the exercise, and some collusion developed among agricultural producers. The marketing teams showed a much smaller tendency to collude.

Most market teams began with unhedged inventories which deteriorated in value, causing some firms to hedge. There was also a tendency among agricultural producers to consider hedging when grain was in storage.

An informal discussion was held at the end of each game. Students volunteered their suggestions during this

period. All students in the three classes felt that the experience was valuable to them. They disagreed, however, as to what they gained from the exercise. Approximately 80 percent felt that new skills were being developed over this time, but 20 percent felt that the game brought out hidden, but previously acquired skills.

Table 3 shows the average performance of the groups which attempted the exercise. Suggestions for improvement of the game were to go through a trial experience before the results are recorded and to restrict credit to agricultural production teams so as to force sales to a greater degree.

Table 3.

	Average Net Profit by Market Group	Average Price Received (Ag. Prod.)	
		Corn/bu.	Soybeans/bu.
Highest ⅓	$1200	$2.39	$6.10
Middle ⅓	730	2.25	5.98
Lowest ⅓	480	2.10	5.36

An average of 1000 bu./week were merchandised by each team.

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State Coordinators Workshop Planned for NACTA Conference

Vice President O.J. Burger indicates a "Workshop for State Coordinators and Regional Directors" has been scheduled for Tuesday, June 13, at 7:30 a.m. during the NACTA Conference at Winnepeg. The schedule includes a discussion of new ideas for membership, development of state affiliates, faculty development, enhancement of the quality of college teaching, and the inprovement of the quality of NACTA itself.

At the request of the NACTA Executive Board, the regional directors have named the state coordinators for 1978-79 so they can use the material presented in the workshop to implement the NACTA program in their state in the year ahead.

The state coordinators for NACTA for 1978-79 are:

Central Region Including Alaska

Alaska	-**Bonita Neiland**, University of Alaska
Illinois	-**Bill Martinie**, Illinois Central College
Indiana	-**A.R. Hilst**, Purdue University
Iowa	**J.W. Schafer, Jr.**, Iowa State University
Kansas	-**Paul Sanford**, Kansas State University
Michigan	**Clifford O. Jump**, Michigan State University
Minnesota	-**Robert M. Collins**, University of Minnesota Technical College - Waseca
Missouri	**Lyndon N. Irwin**, Southwest Missouri State University
Nebraska	**Robert C. Sorensen**, University of Nebraska
North Dakota	-**Calvin Messersmith**, North Dakota State University
Ohio	-**Jerry Halterman**, Ohio State University - Wooster
South Dakota	-**Burt Brage**, South Dakota State University
Wisconsin	-**J.C. Dollahan**, University of Wisconsin - River Falls

Canada

Coordinator	-**Paul Stelmaschuk**, University of Manitoba

Eastern Region

Connecticut	-**John P.H. Brand**, University of Connecticut
Deleware	-**Ralph P. Barwick**, University of Delaware
Maine	-**Winston E. Pullen**, University of Maine
Maryland	-**Paul R. Poffenberger**, University of Maryland
Massachusetts	-**John W. Denison**, University of Massachusetts
New Hampshire	-**Ralph Odell**, University of New Hampshire
New Jersey	-**A. Robert Kock**, P.O. Box 231, New Brunswick
New York	-**Herbert L. Everett**, Cornell University
Pennsylvania	-**Clinton R. Blackmon**, Delaware Valley College
Rhode Island	-**Albert L. Owens**, University of Rhode Island
Vermont	-**William H. Kelly**, University of Vermont
West Virginia	-**P. Vernon Armbrester**, West Virginia University

Southern Region Including Puerto Rico

Alabama	-**Robert Scarth**, Dept. of Animal and Dairy Science, Auburn University, Auburn, AL 36830
Arkansas	-**Lyell Thompson**, Dept. of Agronomy, University of Arkansas, Fayetteville, AR 72701
Florida	-**Daniel O. Spinks**, 1001 McCarty Hall, University of Florida, Gainesville, FL 32611
Georgia	-**J.W. Lassiter**, Animal & Dairy Sciences, University of Georgia, Athens, GA 30602
Kentucky	-**Robert L. Beck**, Dept. of Agricultural Economics, Univeristy of Kentucky, Lexington, KY 40506
Louisiana	-**James L. Cason**, Dept. of Agriculture, Northeast Louisiana University, Monroe, LA 71201
Mississippi	-**James G. Hamill**, P.O. Box 5187, Mississippi State, MS 39762
North Carolina	-**D.A. Emery**, 256 Williams Hall, N C State University, Raleigh, NC 27607
Oklahoma	-**Paul D. Hummer**, Dept. of Agric. Economics, Oklahoma State Univ., Stillwater, OK 74074
South Carolina	-**William C. Cook**, Orangeburg - Calhoun Tech College, P.O. Drawer 1767, Orangeburg, SC 29115
Tennessee	-**Summer A. Griffin**, School of Agriculture, Tennessee Tech. University, Cookeville, TN 38501
Texas	-**J. Howard Hesby**, Texas A & M University, College Station, TX 77843
Virginia	-**William M. Etgen**, Dept of Dairy Science, V.P.I. and State University, Blacksburg, VA 24061

Western Region Including Hawaii

Arizona	-**Donald F. Post**, University of Arizona
California	-**Thomas Gunn**, California State University, Fresno
Colorado	-**V.E. Youngman**, Colorado State University
Idaho	-**Clair E. Blaser**, Ricks College, Rexburg
Montana	-**J.C. Boyd**, Montana State University
Nevada	-**Ronald E. Squires**, University of Nevada-Reno
New Mexico	-**L.A. Holland**, New Mexico State University
Oregon	-**E.C. Stevenson**, Oregon State University
Utah	-**John B. Simpson**, Washington State University
Wyoming	-**L.C. Ayres**, University of Wyoming
Hawaii	-**Shosuke Goto**, University of Hawaii