

consign all the basic education to colleges now balanced on the side of liberal arts, calling for a hundred per cent solid education? Free their teachers from the onus of charges that they are impractical oddballs, considered by some to be mere flunkies who spade the ground for the planting of real substance, later training? If this is done, then what happens to training?

Agriculture holds its own with any occupation, but there are many others these days. The big campuses, already devoted more to phases of specific training than to general education, could be literally severed from the educational system, eliminating a confusion that has now almost reached the point of no return. The process has already started, since many universities have a score and more separate "schools." But ambition gets out of hand; the School of Agriculture, for example, has to compete with the School of Arts and Sciences under the same primarily academic aegis.

Suppose that education was left to stress the general background and culture, as a public responsibility. Suppose that the large and heavily practical campuses, now overloaded in all respects, were converted to sets of independent schools frankly devoted to training, defined as an intermediate stage between education and practice. Let those of each occupation run their own schools, even financing them when organization permits. Let them forget the waste in academic schedules. Let them set their requirements as to levels of general education for applicants. Let them discard that old administrative temporal cliché, four years, fitting their periods of training to the occupations, whether days, weeks, months, or years. Let the working week be a normal working week, not a computer-defeating pattern of thousands of courses, catch as catch can, coming at wildly odd hours.

Training has to follow education, so why not make the line clear? Both sides would be more respected than is possible under a confusion which baffles citizens, students, professors,

and presidents. Education is aimed at life and living, at work or otherwise. The work part calls for training. In a broad sense training is apprenticeship, sometimes best done in the field or shop, sometimes requiring a substantial intermediate bridge. Planes or tractors are too expensive and powerful to turn over to a pilot without the bridge of training.

But training is as focused and specific as general education is broad and comprehensive. Sure, each depends on the other. Sure, each includes some of the other. But have you ever wondered how many combinations of five courses can be made from a choice of five thousand? Have you ever noted how many vocational schools, independent and devoted entirely to training, are now operating? Have you ever wondered what proportion of your colleagues are capable as adequate trainers in agriculture as such? The percentage, though high, will be less than a hundred. Do you want a dentist who has been trained by biochemists or one who has studied biochemistry but was trained by a dentist?

The next step may be and perhaps should be an extension of the number and variety of those units now partially segregated within universities as "schools" or "colleges," but making them independent training schools as such, with full dignity and realism. Relatively few professors would have to flip a coin to decide which way they would go, toward the general in their basic fields or toward their professional alliances. The personnel for both exist. Is your school of agriculture hampered by a number of collegiate rules and ways? Conversely, is your school, which stresses practical needs, hampering the general scholars with whom you are now associated?

Growth occurs by adding cells, not by blowing up existing cells. Campuses suffer from overgrowth. They would produce better seed were their creed less devoted to expansion and more dedicated to sane administrative adjustment, built on a philosophy which is now present but is hopelessly entangled.

TEACHING AGRICULTURAL PRICE ANALYSIS: A DYNAMIC APPROACH

Robert L. Beck
Associate Professor
University of Kentucky

In recent years, increased attention has been given to innovative methods and techniques of teaching undergraduate courses in agricultural economics. Management games have been used in classroom teaching of marketing and in management training programs. Similar types of games have been developed for use in undergraduate farm management courses. In some cases, the students were given the opportunity to actually manage a farm (1). Variations of these games, case studies and other techniques have been tried with varying degrees of success in both extension and classroom teaching (2).

Basically, these efforts are aimed at achieving: (1) personal involvements by the participants in actually making decisions, (2) transfer of classroom principles to real-world problems, and (3) student motivation. In short, these are attempts to inject a dynamic aspect into the course. Some difficulty is encountered, however, in accomplishing these objectives through either the computerized game or the traditional case study in that much realism is lost because of the necessary simplifying restrictions. Accounting for the multiplicity of variables needed to simulate the real-world situation tends to impose so many artificial restrictions that the problem often becomes unrealistic.

AN EXPERIMENT

In an attempt to overcome these limitations and at the same time provide a meaningful experience as a basis for teaching price analysis, a modified market simulation was used

as the framework for course activities in the senior level agricultural price analysis course.

The approach is unique in terms of its simplicity, adaptability to current market situations and the student interest which it generates in price analysis. In addition, some of the obvious limitations of games and case studies may be overcome because the dynamics of the actual market operations become a part of the problem. The uncertainties associated with the market place tend to add realism which is lacking in a system of a priori established probabilities.

Normally, computerized games have limited application in price analysis because of the built-in direction of the flow of causation. Games are set up so that decisions have an effect upon price. However, in price analysis, we are concerned also with decisions in response to price change, sometimes even past price change. This approach provides an unusual opportunity for incorporating these aspects into a worthwhile semester project.

PROCEDURE

To simulate a decision-making situation in price analysis, a group of agricultural commodities including livestock, grain and livestock products was selected. Careful attention was given to specifications such as grade, weight and units, as well as specific market quotations to be used. Commodities were selected which both tend to move through open market channels and be traded on the futures market. The number of separate products included was determined by class size.

To facilitate the analysis, the problem was divided into two segments. The first part, market transactions, involved the whole group of selected commodities. This section was designed to demonstrate succinctly and to impress upon the student the effect of daily price fluctuations for certain commodities, the many factors which contribute to these variations, and the impact of marketing decisions upon the profitability of an enterprise. During the semester, each student was required to simulate the purchase and/or sale of these commodities at central market quotations. The source of price quotations, market, and time lag between quotation and consummation of the transaction were specified. A transaction might involve any quantity of a product with the stipulation that all of the transactions could not be completed simultaneously for the sake of finishing the exercise, since this would defeat the goal of achieving realism. Part of the course grade was based upon realized gross returns from these transactions to provide motivation and insure that each student take this part of the problem seriously.

For the second part, a specific commodity (one of the group) was assigned to each student. For each student, the assigned commodity became the focal point of the entire course. Each student was required to prepare a series of outlook reports. These reports (monthly plus a long-term outlook) were circulated to other members of the class for use in their day-to-day marketing decisions. This not only provided practice in assembling and preparing outlook reports, but was also a convenient means whereby each student was able to keep abreast of changes affecting the total group of commodities. Thus, each student became familiar with techniques, sources of data and types of information for preparing outlook reports. In some cases, the limitations and shortcomings of outlook reports became quite evident, emphasizing the importance of reliable price information. Initially, some familiarity with the production, processing and marketing of the product was important. Time series data relating to production, prices, disposition and marketing formed the basis for analysis and use in the following sections. These were closely integrated with other course material so as to enhance the total learning process.

Simulated trading in futures contracts emphasized the role of hedging. An analysis of the movement of futures and cash prices for the individual commodity as well as completion of a successful hedge was required.

To facilitate a thorough understanding of index numbers, price time series data were used to compute both a simple and composite index of prices received. A simple index of prices received monthly was computed for the preceding 10-year period. Calculation of a weighted composite index of prices received for all the commodities included in the problem was accomplished through some coordination among various subgroups. Decisions regarding the base period, weight-base period and weights were left to the students. Since the index covers a 10-year period, consideration could be given to changing weight-base periods and weights as well as the linking of these to provide continuity.

Parity prices over a specified time period were computed and compared graphically with actual prices received. These exercises, along with the prior exposure to the construction of index numbers, were designed to contribute to a clearer understanding of parity concepts.

One very vital and challenging aspect of the problem involved the analysis of time series price data. Utilizing annual data, a trend line was computed, cycles were identified and variations from one year to the next were noted. An effort was made, drawing on additional data, to explain the reasons behind these observed phenomena. The monthly price series were used to demonstrate seasonal price movements. Data were adjusted for seasonality and a moving average was calculated. Daily price movements were observed and analyzed in terms of possible contributing factors.

One additional aspect of the analysis was the use of multiple regression in developing a predictive model.

Ordinarily, this is a group project since a group effort seems to be more effective than working as individuals. In many cases, the availability of computer time may dictate such. The results then provide the basis for class discussion of quantitative techniques of price analysis.

Finally, the above parts of the entire problem were integrated and prepared in report form. This report was a very important component of the course grade because it encompassed the whole of agricultural price analysis.

AN EVALUATION

Naturally, the use and effectiveness of the above approach in price analysis is not without its limitations and shortcomings. First, because the time period applicable to the daily analysis (determined by the length of the semester or quarter) is short, only a few of the factors influencing price may be noticeably present. This is the critical limitation in the "dynamic approach".

Second, no attempt has been made to include costs incurred in connection with delays in buying or selling commodities. Costs of storage, financing, or holding livestock beyond a certain weight are not taken into account. With some additional refinements, however, this limitation could be eliminated.

A third, but less serious, handicap is that this method is more adapted to small classes. However, large classes may be divided into subgroups and handled in much the same manner.

While there are limitations, these are far exceeded by the advantages. One distinct advantage accruing to the instructor is that this approach not only provides continuity for the different phases of the course, it serves as a point of reference for questions, discussion, and examples. It facilitates the injection of relevance and importance to the course by projecting a current rather than historical perspective. Current changes in the market place are viewed with more than a passing interest.

A primary objective of this technique is to stimulate and motivate the student through direct involvement. In general, the method has proved successful in attaining this objective. Students view this as an integrated and related approach to price analysis as opposed to so much "busy work". They, seemingly, are able to grasp the relevance and significance of a careful analysis of market conditions prior to making a decision. This is clearly demonstrated in the concern often expressed over a bad decision.

The analysis of daily price quotations tends to make the student cognizant of the frequent variation in price from one day to the next. The availability of current information contributes to an explanation and understanding of these fluctuations. The student becomes very much aware of the multiplicity of factors which influence prices and the significance of considering these when making marketing decisions. A reasonable explanation of price variability, whether daily or over a longer period of time, forces the student into depth and detail in the analysis. It necessitates consideration of, and search for, both endogenous and exogenous variables influencing price. The only explanation which the student should accept as final relative to price movements is a hypothesis which has been scientifically verified.

Another rather definite advantage of the approach is that it encourages students to become familiar with the operation, use and capabilities of computers in solving economic problems. More importantly, however, the student becomes intimately involved in model building. Building a model and then, subsequently using it as a tool in decision-making, affords an experience which is completely lacking in case studies or computerized games. This experience also provides a better introduction to both basic and applied research.

For the student, integrating all the pieces into a composite report provides some very vital training. An awareness is developed for the factors associated with price variations,

analytical tools in price analysis, as well as the much-needed introduction to computer techniques. (in the one exercise involving use of the computer). The project becomes an integral part of the course, and, in general, the favorable reaction by students to this approach has been encouraging.

REFERENCES

(1) Wallace, James J., "Student Management of a Laboratory Farm," *Journal of Farm Economics*, 45:563-566, August 1963.

(2) For a sampling of references, see: Emerson M. Rabb, "Business Games as a Marketing Extension Tool," *Journal of Farm Economics*, 46:1024-1028, December 1964; David H. Hammond, J. Robert Strain, and C. Phillip Baumel, "Simplifying Management Games for Extension Programs," *Journal of Farm Economics*, 48:1028-1030, November 1966; Lowell D. Hill, "The Agribusiness Community as a Laboratory for Teaching Business Management: An Experiment in Undergraduate and Adult Education," *Journal of Farm Economics*, 49:1326-1331, December 1967.

TIPS FOR ANYONE WISHING TO WORK IN A DEVELOPING COUNTRY

Dr. Benton K. Bristol
Teacher Education
Illinois State University
Normal, Illinois 61761

Much has been written about the need for international understanding. Understanding is essential in order for knowledge to be put to work. As used here, it includes all the processes involved in comprehending and judging situations so that effective decisions can be made and proper actions taken. Anyone wishing to work in a developing country should be committed to the furtherance of international understanding, and be willing to do the necessary preliminary work to acquire at least a minimum amount of such understanding.

In one sense, all countries are "developing countries," since all have a long way to go in achieving their desired national goals. In this article, however, a developing country is considered as one which has become free to determine its own destiny in the last twenty-five years or less. Many of them have been dominated and exploited by foreign powers for centuries prior to their independence. None has shared in the industrial revolution which advanced living standards so greatly in Western nations. Few can produce enough food to feed exploding populations.

The United States has six percent of the world's population, and consumes nearly one-third of the gross world product. (It is more correct to use the designation, "United States", rather than "America" as is often done by those who seem to forget that there are neighboring countries which are also part of America.) A certain degree of modesty is a useful attribute for potential overseas workers.

For humanitarian reasons and because of national self-interest, we have sent millions of dollars and thousands of technicians to assist newly developing nations. Skromme¹, writing in a recent issue of *Agricultural Engineering - The Journal of the American Society of Agricultural Engineers*, makes the following statements.

It has taken America a long time to learn that merely sending billions of dollars overseas is not an effective way to aid less developed countries. Often not only do these dollars appear wasted - but they may have done more harm than good! But exporting knowledge to show these people how they can help themselves usually is successful. Most underdeveloped countries have an extremely inefficient agriculture; most of the population must expend most of its efforts merely to provide sufficient food and materials for survival.

Skromme also says: "One of the best ways to aid developing countries is to help them develop their base industry of agriculture."

There is no doubt that the various foreign programs sponsored by United States private and public agencies will continue to create a need for agriculture, agricultural education, and related overseas personnel.

In order for U.S. workers in developing countries to be truly effective, they should have certain basic essential understandings. One of the first ones is an understanding of self. Honest answers to the following questions may be helpful:

1. Do I realize that working in a developing country can be hard and difficult?
2. Do I have the dedication and missionary zeal necessary to help men and women, boys and girls to a better and happier life?
3. Do I have a natural enthusiasm and optimism which will help overcome feelings of exasperation when progress seems slow?
4. Am I willing to help people understand their problems and work out solutions rather than telling them what they should do?
5. Will I be able to retain my cultural identity and still allow the people I work with to retain theirs?
6. Do I have the necessary confidence in my own ability to perform at the required level?
7. Is my health good enough to allow me to live and work effectively in a newly developing country?

Dr. Erly Diaz Brandao² lists ten characteristics necessary for a person to be effective in a technical assistance program:

1. He should be intelligent and well trained in his technical field of endeavor.
2. He should have a strong interest in learning the language.
3. He should have had experience, and the desire and ability to adjust to a new environment.
4. He should have a little of the spirit of a pioneer.
5. He should be tolerant of people's ideas and points of view.
6. He should be sure that he is going to be working with good people - people who are perhaps not as well trained technically, but nevertheless people of a high level of intelligence and good will.
7. He should have a willingness to work with what he encounters and to make changes from that point, without wanting to change everything immediately.
8. He should be enthusiastic, because in many cases he will need to sell his ideas and points of view.
9. He should appreciate that the important thing is the objectives of the project, and realize that these can be attained in a variety of forms; in other words, he needs to be flexible.
10. He should have a wife who shares these characteristics.

It is not always possible to recruit technicians for overseas work who have all the desired characteristics. The importance of each individual quality will vary according to the particular assignment. Many people in some developing countries, for example, are quite proficient in English as well as their country's language. In this instance the technician who speaks English will not find it quite so necessary to learn a second language. However, it is always a good idea to learn as many useful words and phrases of the country's language as possible.

Anyone deciding he would like to work in a foreign land should become familiar with the technical language and relevant literature of the field.

From the hundreds of publications available, the following are recommended as good starting points:

Education of Development Technicians - A Guide to Training Programs by Thomas F. Trail, Frederick A. Praeger, Publishers, Inc., 111 Fourth Avenue, New York, N. Y. 10003. 1968.

Traditional Cultures: and the Impact of Technological Change by George M. Foster, Harper and Row, Publishers, Inc., 49 East 33rd Street, New York, N. Y. 10016. 1962.

The two books are comprehensive, well written, and authored by recognized authorities with extensive but