Student-Centered Learning Activities in a Basic Economics Course

***David A. Munn*[1,2]**
The Ohio State University Agricultural Technical Institute
Wooster, OH 44691

Abstract

Economics remains an abstract subject to many undergraduate students. New approaches to teaching suggest that student-centered learning activities, in contrast to traditional lecture methods, can increase student interest and enhance their success. The author has developed and used several such activities in an introductory economics course to complement the traditional lecture material. The activities include guest speakers from the community area, videos that depict historical economic events, a stock market tracking assignment, and some practical cost, revenue, and profit simulations. Results of student surveys and written class comments on these student-centered learning activities are reported for two classes. They are generally positive, but student responses indicate they want such activities to count significantly in the course grade.

Introduction

General Economics is a course taught at a two-year agricultural technical college. This basic course is included as a part of the curriculum in all the associate of applied science programs at the college. The major reasons cited for making economics a required course is the need for students to understand the macroeconomic functioning of the national and world economy and the appropriate roles of government in economic affairs. In addition the microeconomic principles developed in the course support further coursework in marketing, business and agribusiness management.

The purpose of this article is to describe some student-centered learning (SCL) activities that were incorporated into the basic economics course as a complement to the traditional lectures and to discuss the reactions of the students as well as the instructor's experiences with the success of these learning activities.

Several recent studies have shown that courses in economics can be effective in fulfilling the goal of economic literacy. Gleason and Van Scoyoc (1995), in the study of adult economic literacy in the USA, reported that general education level and formal economics training were positively correlated with test scores measuring economic literacy. Walstad (1997), in a study of the effects of economic knowledge on public opinion of economic issues, reported a positive and long-term impact of a college course in economics on the survey respondent's level of economic knowledge. He also reported that economic knowledge may be the most critical factor determining public opinion on economic issues.

Classroom instruction and improvement in teaching are receiving increased attention in colleges and universities (Dare, 2001). In particular, an approach to teaching that emphasizes student learning as a complement to traditional lecture style content delivery is gaining importance and acceptance. The term student-centered learning (SCL) is often used to describe this pedagogy. More commonly in the literature, it is referred to as active or cooperative learning (Marzano, 1992; Silberman, 1996; and Stage, et al. 1998).

Becker and Watts (2001) reported the results of an extensive survey of undergraduate programs offering courses in economics. While they noted increased interest in and emphasis on teaching, the overall survey results indicated a very large part of undergraduate economic instruction is still heavily focused on the chalkboard as a delivery medium and the lecture/discussion method as the teaching mode. The authors lamented the fact that newer concepts such as SCL and increased use of new technology in the classroom are only slowly being adopted by college teachers of economics. They termed the current circumstance “chalk and talk” which has become a buzzword for the status quo in economics classroom instruction.

Caropreso and Haggerty (2000) have recently published a cooperative learning model for teaching introductory economics. They advocate weaving group work and SCL activities into course lessons so that occasional instructor lectures become the change of pace rather than the norm of the class.

Moss et al. (2002) have recently published a study relating Gregorc learning styles, SCL techniques, and student performance in an introductory agricultural economics course at the University of Illinois. They found that active and problem-based learning formats had a positive impact on student learning. They used a scale, 1 = very low to 5 = very high, to measure student perception of the learning value of the following instructional strategies: “lectures,

[1] Associate Professor, 1328 Dover Road,

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discussion sections, textbook, web site, computer exercises, neighbor questions, mastery tests, syllabus and on line lecture notes." They performed statistical analysis of the student perceptions of learning strategy values and grades earned in the class as influenced by demographic factors such as gender, class year, farm background and academic major, as well as the four Gregorc learning style groups (CS,CR,AS,AR). They concluded that active learning and problem-based learning significantly and positively impacted student learning. They also noted a relationship between the Gregorc learning style preferences of students and their academic performance.

The course General Economics used in this study is a requirement in all programs that lead to an associate of applied science degree. This five-quarter credit-hour course serves as an introduction to both macro and microeconomic concepts and personal finance. Macroeconomic topics include: the circular flow model for the economy, the nature of money, functions of banks, the roles of the Federal Reserve, and appropriate roles for government in managing and directing the economy in order to carry on public policy and programs. International trade and finance is a third general content area. Microeconomic topics include scarcity, opportunity costs, markets and prices and analysis of costs revenues and profit or loss.

The course serves as a foundation of economic principles for subsequent business courses such as accounting, marketing, sales, and business management. The course also helps prepare students to be informed citizens and voters in the representative democracy form of government of the United States. Math placement above the remedial level is the only prerequisite.

There is a two-fold challenge to the instructor assigned the task of teaching this type of basic economics course. First, there is a substantial amount of material to present in a single course. Second, students typically have little familiarity with the subject matter and lack intrinsic motivation to study economics. The content of economics should support the development of higher-order thinking skills and connections to the "real world" of business and government. The activities reported in this paper are primarily written and oral assignments to increase student learning and also represent attempts to motivate students to want to learn more about economics as they see the connections to the real world in the applications of principles of economics.

During the instructors many years of teaching the basic economics course, modifications in teaching and learning activities have been consistently made in order to better meet the challenges described above. In particular, a number of SCL techniques have been created as a complement to traditional lecture/discussion activities. These are described in the section that follows and student reaction and instructor insights are given in the results and discussion.

Student-Centered Learning Activities

Short Writing Assignments on Contemporary Issues in Economics

These assignments are to be based on a single source such as a US News, Time, Newsweek, Wall Street Journal, or Business Week feature article. The assignment has two parts: summarize the source and give a reaction or analysis of the presentation in the article. The topic is discussed in class on the day the assignments are due. Some topics will have been covered in lecture in class before the due date and others are not covered directly in lecture before the reports are collected in class. The topics for these assignments are detailed on the syllabus and the papers are due approximately every three weeks. The students are required to complete these assignments with a word processor, and they are graded for grammar and spelling. These short writing assignments comprised 10% of the course grade in 2002 and 15% in 2003. Examples of topics that have been assigned include the federal budget and debt, the cost of social programs (such as Social Security and Medicare), the Microsoft Corporate Antitrust suit, the collapse of Enron Corporations, and the impact of the terrorist attacks on the World Trade Center on financial markets in the USA and the world. Munn and Copeland, (1991) have made a case for and explained the use of these short writing assignments and how they can connect course content to current literature and events.

Economics USA Videos as the Basis for Classroom Viewing and Discussion

These videos (Corporation for Public Broadcasting, Annenberg CPB Project, Economics U$A Videos, 401 9th St NW, Washington, DC 20004) and the companion text by Mansfield and Behravesh (2001) are in the instructor's opinion, an excellent resource that uses a combination of investigative reporting and economic commentary. The entire series of 28 video segments covers macro and microeconomics topics set in the context of contemporary American life (late 1980s) and U.S. history, particularly the 20th Century. Approximately 10 of the 28 video lessons are used sometimes showing all thirty minutes, but more commonly only two of the three examples or events that illustrate each video theme are selected. This leaves more class time for discussion and/or written reactions by the students. Students receive previously-prepared, open-ended written discussion questions to jot notes as they view the video segments. The balance of the class period is used to complete the discussion questions. In 2002

these questions were only discussed but not collected and graded. In the 2003 class these discussion sheets were collected and marked for 2% each or 10% of the total course grade for each one that was used. Keeping any documentary studies like these very current is of course difficult, but recently updates to a number of the lessons have been announced by the publisher.

Stock Market Tracking Assignment

At the beginning of the course, each student is given a hypothetical $10,000 to buy shares of at least three publicly-traded stocks. Students must turn in the cost and number of shares for each of their three stocks plus the trading fee or commission on each purchase. Students are asked to chart the weekly price of their three stocks by hand tracking and recording from a traditional source, such as the Wall Street Journal, or they can look up share price history charts on investment web sites and print them as a record of the stock's performance. At the end of the quarter, students sell their "shadow shares" at the prevailing price, compute the trading fees or commission, and evaluate their net gain or losses. This counted as 4% of the course grade in 2002 and 5% in 2003.

Guest Speakers from the World of Business

Four to five guest speakers visit the class and their presentations are spread over the academic term as a change of pace. Topics have included bank personal and business loans, purchasing a home, personal savings tools, such as IRA and 401 K accounts, and insurance. Speakers include local bankers, insurance agents, realtors and financial planners. Guest speakers have first-hand knowledge and "expert" status as real practitioners on these topics. Eight percent of the total grade is allocated for all guest speaker presentations. Students write a reaction to the speaker in the last 5-10 minutes of the class session to earn these points.

Cost Revenue Profit/Loss Case Studies

Several problems have been developed and incorporated in the course that illustrate the principle of diminishing returns as more units of one input are added to a production activity. Examples include additional units of nitrogen fertilizer in enterprises, like cabbage or corn production, where all other factors and costs are assumed for simplicity to be part of the fixed cost. Only the cost of the variable input fertilizer nitrogen and the sale price of the commodity are allowed to vary. The variable, total, marginal and average costs are calculated along with total revenue and profit or loss. Use of a spreadsheet makes it easy to demonstrate the impact of a change in fertilizer input price or to gage the impact of a rise or fall in the selling price of the commodity on the profitability or potential losses of the enterprise. The yield responses to nitrogen are taken from real soil fertility studies with corn and cabbage at The Ohio State and Texas A & M Universities. The yield response to fertilizer inputs are also used to sketch simple production functions.

Since many of the students are enrolled in ornamental horticulture programs, a small business case study called the Lawn Care Company is created that assumes three variable inputs: (1) lawn care route employees, (2) supplies, such as fertilizer, insecticide, and fungicide and (3) leased pickup trucks with a tank, sprayer, pump, hose and nozzle to treat customer lawns with liquid material. The price the business charges to treat a standard 10,000 square foot lawn, the price of the supplies (rolled together into a standard amount, such as $10 per lawn), the wages and benefits of the lawn care route employees, and the price of leasing the equipment can be varied. The overhead or fixed costs are comprised of all other costs, such as headquarters employee(s), advertising, utilities, property and liability insurance etc. The case study is an oversimplification, but students find it challenging. Many ornamental horticulture majors have found this case study to be relevant, because they have observed lawn care companies at work in their community, and some students have actually worked in the lawn and landscape care industry.

In 2002 these assignments were completed and the results shared with the class, but they were not collected and graded. In 2003 the same activities were used, but they were collected and graded and comprised 4% of the grade.

Results and Discussion

Student satisfaction with these SCL activities was assessed with a survey instrument and also from the many detailed written comments on the end-of-the-term student evaluations of the class. Each student was provided a sheet of paper that solicits comments about the instructor, the course, and their own attendance, motivation and effort on the end-of-the-quarter evaluation. On the test campus, the evaluation is administered by a colleague and typed up by the division secretary for return to the instructor and submission to the instructor's supervisor after the grades are submitted.

A simple survey instrument, with a 15 numbered scale explained in Table 1, was created and administered to my classes near the end of Winter Quarter of 2002 and 2003 to collect student views on the SCL activities just described. The instrument with the sample mean and standard deviation of the responses to each question is summarized in Table 1.

Because of the article by Moss et al. (2002) described earlier, I asked my students to list their Myers-Briggs personality type inventory code and their cumulative grade point average (GPA) on the survey in the 2003 class year. It was hypothesized

that differences in student responses to the SCL activities would be related to Myers-Briggs personality types or to students prior academic success as indicated by their self-reported GPAs. However, only 5 of 36 students could list their Myers Briggs personality profile abbreviations, so this hypothesis could not be tested for the Myers Briggs personality type.

Table 1. Student survey form with sample mean† and standard deviations for the classes of 2002 and 2003.

	Class Results 2002	Class Results 2003
1. Short Writing Assignments on Contemporary Issues in Economics	3.3 0.9	3.4 1.3
2. Economics U$A Videos as Basis for Viewing and Discussion in Class	2.8 1.1	3.0 1.0
3. Stock Market Tracking Assignment	3.3 0.9	3.4 1.2
4. Guest Speakers from the World of Business	4.0 1.0	3.8 0.9
5. Cost Revenue Profit/Loss Case Studies	3.2 1.2	3.4 1.2
Number of Responses/enrollment	31/43	36/46

† 1 = Not Useful; 2 = Somewhat Useful; 3 = Useful; 4 = Very Useful; 5 = Extremely Useful

Only 27 of 36 (75) students listed their GPA. This suggests that for the other 25% of the students, grades are not a matter of fear or pride sufficient to know their GPA. The mean SCL, student satisfaction score, was prepared as a scatterplot for comparison with students' self-reported GPAs (Figure 1). Linear regression showed a positive relationship with student grade point averages that was significant at the $P < 0.05$ level. This suggests that students who earn higher overall grades (not just their grade in this economics class) responded more positively to these SCL activities. Good students are positive about extra and varied class assignments, especially if they count significantly in their course grade.

Students found the guest speakers who addressed the class on practical topics to be the most useful activity in both class years (Table 1). This activity demanded the least of the students. They got points for attending, being a polite audience, and turning in a written reaction summarizing the speaker's main points and what they "learned" that was new to them from the presentation at the end of each guest session to document their attendance and participation. The stock market tracking assignment, and article summaries on topics related to current events in the economy received useful and similar ratings from the students in both years (Table 1). Several students had words of praise for the stock market tracking assignment in their written course evaluation comments.

The lowest level of usefulness, in the students view, was the viewing of Economics U$A video segments with written discussion questions to answer. The class discussed, but the instructor did not collect and grade the questions in 2002, when students rated this item with 2.8 out of 5.0. In 2003 the video discussion sheets were collected and graded. The mean student rating improved slightly to 3.0 out of 5.0. But based on large sample standard deviations, the mean score improvement of 0.2 is not significant. One student wrote on his comments on the course evaluation: "Economics videos were older than most of the students in the class." They did not accept the challenge to learn economic lessons from the history of the 20th Century presented in the videos. Another student observed that "Watching Economics U$A videos was like watching cement dry." Clearly the economic and political history in these videos did not appeal to some of my students.

The cost, revenue, profit or loss case study activities were not collected and graded in 2002, and the three activities that were done in 2003 were collected and graded for 6% of the total grade. There was a small improvement of student perception of the learning value of these calculation sheets in 2003 when they were collected and graded but not enough to be significant (Table 1). Experimental use was made both years with sharing the cost, revenue, and profit or loss calculations on a Microsoft Excel spreadsheet on a large illuminated screen. This seemed effective to the instructor, but students found it moved too fast, and they did not benefit from the repetitive calculations as a reinforcement technique. The survey findings are consistent with the students' written comments on their class evaluations from the last five years that I have

Table 2. Final grades earned by students.

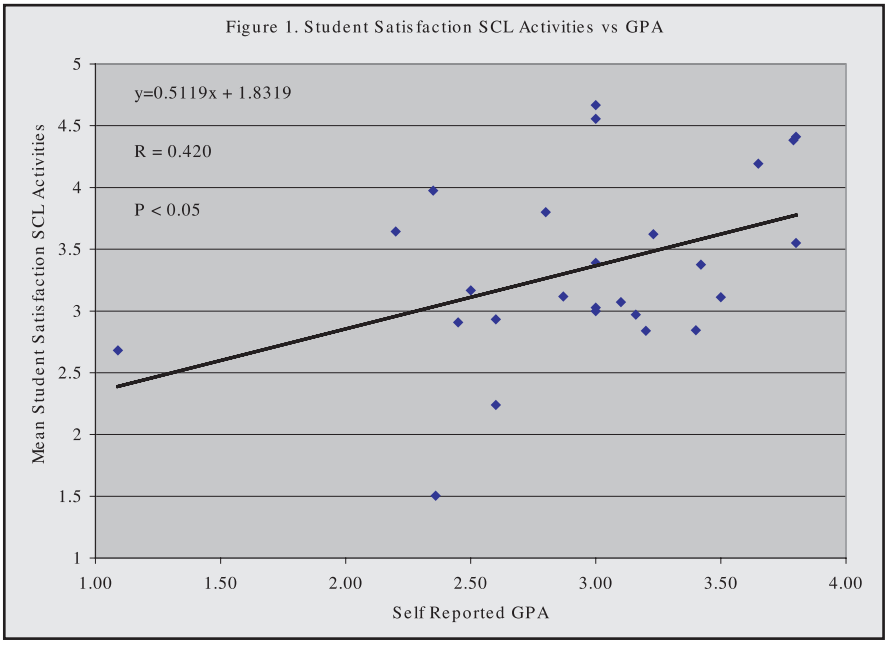
Grade	2002		2003	
	No.	(%)	No.	(%)
A	4	(10)	7	(15)
B	9	(22)	20	(43)
C	17	(41)	10	(21)
D	8	(20)	5	(11)
Failing	3	(07)	4	(09)
Total Enrollment	41	(100)	46	(100)

used these same activities. Students want SCL tasks and assignments to be a significant part of the total points earned in the course.

Students earned higher final grades in 2003 than in 2002 (Table 2). This reflects a larger portion of the grade (40% in 2003 versus 20% in 2002) coming from activities other than the lecture exams in 2003. It also is reflective of the use of extra opportunities to earn scores that the students were offered in 2003. I used the cost, revenue, profit and the Economics U$A videos discussion sheets as 15% of the final grade and gave the students ten opportunities to count their seven best scores. The goal was to encourage students to continue to try to improve their grades throughout the quarter with participation in these activities.

Summary

The student-centered learning activities shared in this article include article summaries on current topics in economics, sharing and discussion of Economics U$A videos, guest speakers from the world of business, a stock market tracking assignment, and cost revenue/profit or loss case studies. These activities provide alternative styles and kinds of learning activities to traditional lecture methods in presenting introductory economic concepts. Their use is somewhat supported by student perceptions of their value as revealed by a simple survey instrument and several years of course evaluation comments.



Students seem willing to engage readily in such activities if they count as a significant part of the course grade. Student comments on their evaluations in 2002 indicated they wanted all SCL activities to count in their final grade. When the all SCL activities were included in the final grade in 2003, grades were improved. Lecture exams are the most challenging part of the class, and having SCL activities count for a larger part of the grade may have simply opened an easier path to the students' grade goals.

Literature Cited

Becker, W.E. and M. Watts. 2001. Teaching methods in undergraduate economics courses. Jour. of Economic Education 32 (Summer): 269-279.

Caropreso, E.J. and M. Haggerty. 2000. Teaching economics: A cooperative learning model. College Teaching 48(2):69-74.

Dare, Donna E. 2001. Learner-centered instructional practices supporting the new vocationalism. New Directions for Community Colleges (Fall) 115:81-91.

Gleason, J. and L.J. Van Scoyoc. 1995. A report on the economic literacy of adults. Jour. of Economic Education 26 (Summer): 203-210.

Marzano, R.J. 1992. A Different Kind of Classroom Teaching with Dimensions of Learning. Alexandria, VA: Association for Supervision and Curriculum Development.

Mansfield, E. and N. Behravesh. 2001. Economics U$A, 6th ed. New York, NY: W.W. Norton & Co.

Moss, L. E., W.D. Seitz, W. R.Q. Anton and T. E. Anton. 2002. Learning styles, student centered learning techniques and student performance in agricultural economics. NACTA Jour. 46(4):34-38.

Munn, D.A. and E. Copeland. 1991. Multipurpose writing assignments for a general and agricultural economics course. NACTA Jour. 35(1): 43-45.

Silberman, M. 1996. Active Learning: 101 Strategies to Teach Any Subject. Boston, MA: Allyn and Bacon Publishers.

Siegfried, John J. 1995. Trends in undergraduate economics degrees: A 1993-94 update. Jour. of Economic Education 26 (Summer): 282-287.

Siegfried, J.J. 1998. Trends in undergraduate economics degrees: A 1996-97 update. Jour. of Economic Education 29 (Summer): 285-288.

Stage, F.K., P.A. Muller, J. Kinzie and A. Simmons. 1998. Creating learning-centered classrooms: What does learning theory have to say? ASHE-ERIC Higher Education Report Volume 26, No. 4 Washington, D.C. The George Washington University, Graduate School of Education and Human Development.

Walstad, W.B. 1997. The effect of economic knowledge on public opinion of economic issues. Jour. of Economic Education 28 (Summer): 195-205.