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FREE ENTERPRISE ATTITUDES: THE INFLUENCE OF LOCUS OF CONTROL, PERSONALITY, AND GENDER

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ABSTRACT

What determines the attitudes that students have toward the components of our free enterprise system? This paper addresses that question by tying locus of control, personality types, and gender to individual economic beliefs. This study uses a test of economic conservatism to elicit measures of economic beliefs. Those beliefs are then correlated with locus of control responses, reported personality types, and gender. These finding demonstrate that such measures are important when considering the perceptions individuals have about economic systems. Since economic attitudes are influenced by these variables, then a concern for free enterprise educators is that the potential for learning to also be influenced.

INTRODUCTION

The economics profession has recognized for some time that the study of economics can have an impact on beliefs and attitudes. Advocacy of the free enterprise system emphasizes the functioning of private ownership and competitive markets to allocate resources in an efficient manner and limit private power. Stigler (1959) outlines economic conservatism related to the study of economics as student beliefs and attitudes on these issues. Boulding (1969) recognizes that economic and political attitudes are not independent of the social process and considers this to be an important topic for economic education research. Since those beginnings, a good deal of research has studied the impact of economic education on beliefs and attitudes.

A lesser amount of research has been done on understanding how the beliefs and attitudes about economic institutions are formed a priori. Since markets reflect the control of economic activity, an individual's attitudes toward issues of control may influence beliefs as to the functioning of economic systems. In addition, personality and gender are important influences on individual economic decision-making. (Parker, Spears 2002). This paper asks to what extent do these types of individual differences influence perceptions and attitudes about the free enterprise system?

A factor analysis of survey responses is used to identify alternate attitudes about the free enterprise system. One set of factors reflects beliefs about the market allocation of resources and the efficiency of the free enterprise system. Another set of factors captures beliefs about private ownership and private power in a capitalist system. A separate factor analysis is conducted to identify components of locus of control attitudes.

Regression analysis is then employed to investigate the correlation between attitudes as reflected in the free enterprise factors and locus of control factors, individual personality types, and gender.

LOCUS OF CONTROL, PERSONALITY TYPE, AND GENDER

Links have been found between locus of control and behavior patterns in a number of different areas. The concept of locus of control (Rotter, 1966, 1990) was devised to assess the extent to which an individual can deal with or control events that affect them. The Internal-External Locus of Control Scale (I-E) forces choices between statements conveying internal locus of control and those conveying external locus of control. People with a strong internal locus of control believe that they have a command over their environment. They see a reasonable chance of success and are not troubled by change. Even if change is seen as being from external causes, they believe they can influence the impact of change and feel confident with their coping skills. Those with a strong external locus of control are more inclined to believe that success is from luck, accident or coincidence. The locus of control scale with a more economic perspective was developed to assess behavior in employment/organizational situations (Blau, 1993; Orpen, 1992; Spector, 1982, 1988). Although agreed that psychologists expect a person's locus of control, or general outlook on life, to play a primary function in developing a person's conception of self, Goldsmith, Veum, and Darity (1997, p822) contend, "economists have taken the position that personality is either unobservable or unmeasurable".

According to Jungian psychological theory, information is received and processed differently by different personality temperaments (Jung, 1971). Personality types have been linked to economic decision-making and are correlated with the social dimension of market exchange (Peitrykowski, 1995). Being able to determine an individual's personality type gives some insight to how they will react in certain situations, how their temperament, character, and personality are configured, and how they are predisposed to certain actions and attitudes. When linked to economics, the theory of market power and individual personality determines communication practices through which individual needs are shaped and decisions are made.

One of the more common approaches to measure personality is the development of Myers-Briggs Type Indicators: Extravert or Introvert, Sensor or Intuitive, Thinker or Feeler, and Judger and Perceiver. Myers-Briggs Type Indicators, based on Jungian psychology type theory, is used as a framework to discuss personality types and their potential to influence decision making under risk and uncertainty (Myers 1962;Myers and McCaulley, 1989).

The Extravert-Introvert index (E or I) is the most likely misunderstood of the personality indicators. These indicators do not reflect the life of the party or the wallflower, but recognize the internal or external attention or source of energy. Extraverts tend to be sociable, risk takers, and have a variety of interests. Extrovert students often answer quickly and have a need to "hear" themselves think by talking out loud. Introverts look inward for energy and tend to be more private and inward turning. Introvert students need time for reflection and tend to be more silent in class.

The Sensor-Intuitive index (S or N) reflects how a person chooses to gather information or perceives the world. Sensors trust their own senses to gather information about the world around

them and as students focus on detail and prefer experiential learning. Intuitives gather information by intuition or hunches and as students want to see the larger picture instead of details. They like solving problems and are innovators.

The Thinker-Feeler index (T or F) reflects how a person prefers to make judgments or decisions. This does not imply intelligence or emotion, but how an individual evaluates information. Thinkers tend to make decisions with emphasis on analysis and fairness. Students who are thinkers are the debaters and persuaders of the classroom. Feelers, on the other hand, are harmonious and base their decisions on personal values. Feeler students prefer collaboration and need a relationship with fellow students.

The Judger-Perceiver index (J or P) reflects how a person prefers to deal with the world. Judgers are goal oriented, orderly and structured. They tend to need closure and are uneasy until decisions are made. Students are very organized in their work and tend to finish work before deadlines. Perceivers are spontaneous and like flexibility. They like to keep their options open and are uncomfortable with making decisions without investigating all alternatives. Perceiver students require flexibility in classroom assignments and often have a "just-in-time attitude with required deadlines. (Borg and Shapiro, 1996; Myers, 1975; Keirsey, 1998)

Personality types are also related to economic education. Borg and Shapiro (1966) and Ziegert (2000) show that personality types influence the success of students in the understanding of economic decision-making. Their analysis into learning and teaching styles asks not only which personality types may be suited for studying economics, but also considers the impact of student and teacher personality types clash.

Gender is one of the most important independent variables that should be investigated when looking at decision-making (King & Hinson, 1994). Women communicate and make decision differently than men. Brown states that "gender begets gender roles" (1996, p 243) and in decision-making, behaviors consistent with gender roles are most likely to be affected. Using personality type indicators, women tend to be more F (feelers) than T (thinkers). The feeler person bases decisions on personal values and harmony. Their decision making style is subjective and empathic (Center for Application of Psychological Type, 1993). One of the most evident manifestations of gender roles is in the risk women are willing to take in making decision. Recent Literature concludes that women have a lower preference for risk than men (Hyde, J.1990; Powell, M., and Ansic, D. 1997; Sonfield, M., Lussier, R., Corman, J., and KcKinney, M., April 2001) but no differences in decision-making values or styles (Powell 1990). In recent studies, no significant gender differences have been found in locus of control (Legua, 2000; Trentham, 1998).

REFERENCES

Blau, G. (1993). "Testing the relationship of locus of control to different performance dimensions". *Journal of Occupational and Organizational Psychology*, 66, 125-138

Borg, M., and Shapiro, S., (Winter 1996) "personality type and student performance in principles of economics," *Journal of Economic Education*, 27(1), 3-25.

Boulding, K., (1969) "Economic education: The stepchild too is the father of the man," *Journal of Economic Education*, 1, 7-11.

Brown, L. S. (1986). Gender-role analysis: A neglected component of psychological assessment. *Psychotherapy*, 23, 243-248.

Center for Applications of Psychological Type (1993). An assortment of facts about type in education. Gainesville, FL.

Hyde, J. (1990). "Meta-analysis and psychology of gender differences," *Signs: Journal of Women in Culture and Society* 16, 55-73.

Goldsmith, A.H., Veum, J. R., Darity Jr., W. (1997) "The impact of psychological and human capital on wages", *Economic Inquiry, 35(4), 815-30.*

Jackstadt, S., Brennan, J., and Thompson, L., (1985). "The effect of introductory economics courses on students' conservatism," *Journal of Economic Education*, 17, 37-51.

Jung, C. G. (1971). *Psychologische Typen, English. Princeton, NJ: Princeton University Press.*

Keirsey, D., (1998) *Please Understand Me II*, Del Mar, CA: Prometheus Nemesis Books.

Lengua, L. (2000). "Gender, gender roles, and personality: gender differences in the prediction of coping and psychological symptoms. *Sex Roles: A Journal of Research.*.

Locus of Control – Short, user Survey. Retrieved November 17, 2001, from http://www.dushkin.com/connectext/psy/ch11/survey11.mhtml.

Myers, I. (1962). *The Myers-Briggs type indicator*, Educational Testing Service

Myers, I. (1975). *Manual: Myers-Briggs type indicator*. Palo Alto, CA: Consulting Psychologists Press.

Myers, I. and McCaulley, M., (1989) *Manual: A guide to the development and use of the Myers-Briggs Type Indicator*, 15th ed. Palo Alto, CA: Consulting Psychologists Press.

Orpen, C. (1992). "The work locus of control scale as a predictor of employee attitudes and behavior: a validity study". *Psychology: A Journal of Human Behavior*. 29, 35-37.

Parker, D., and Spears, M., (2002) "Personality type, gender, and risk: a framing analysis," *Economics and Economic Education Research Journal*. (Forthcoming)

Pietrykowski, B. (1995). Beyond contested exchange: the importance of consumption and communication in market exchange, *Review of Social Economy*, 53(2), 215-242.

Powell, G. (1990). "One more time: do male and female managers differ?" *Academy of Management Executive* 4(3), 68-75.

Powell, M., & Ansic, D. (1997) "Gender differences in risk behaviour in financial decision-making: an experimental analysis," *Journal of Economic Psychology* 18(6), 605-628.

Rotter, J. (1966). Generalized expectancies for internal versus external control of reinforcements, *Psychological Monographs*, 80(1), 1-28.

Rotter, J. (1990). Internal versus external control of reinforcement: A case history of a variable. *American Psychologist*, 45, 489-493.

Sonfield, M., Lussier, R., Corman, J., & KcKinney, M. (April 2001) "Gender comparison in strategic decision-making: an empirical analysis of entrepreneurial strategy matrix," *Journal of Small Business Management*, 39(2), 165-175.

Spector, P. (1982). "Behavior in organizations as a function of employee's locus of control". *Psychological Bulletin*, 91, 492-497.

Spector, P. (1988). "Development of the work locus of control scale", *Journal of Applied Psychology*, 77, 251-260.

Stigler, G., (1959). "The politics of political economists," *Quarterly Journal of Economics*, 73.

Trentham, S. (1998) "gender discrimination and the workplace: an examination of rational bias theory". *Sex Roles: A Journal of Research.*

Ziegert, A. (2000). The role of personality temperament and student learning in principles of economics: further evidence. *The Journal of Economic Education,* 31(4), 307 –327.

THE STOCK MARKET GAME IN ECONOMICS INSTRUCTION

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ABSTRACT

The Stock Market Game [SMG] is designed to help motivate students to learn about the American economic system through the stock market. In Arkansas the SMG is distributed exclusively through the Arkansas Council on Economic Education [ACEE]. The Center for Economic Education and Students in Free Enterprises [SIFE] programs at Arkansas State University [CEE-ASU] have been using this simulation to introduce regular college students enrolled in economics courses and inservice-teachers to the stock market and the enterprise economy.

The ASU SIFE team has been involved with the project in three ways. First the team has written two major publications and ten special activities' sheets distributed to students grades three through 12 participating in the program. The state had 1,200 teams in 1997-1998 alone.

The second publication, entitled The News Cookbook Journal, presented the stock market in the framework of corporate activity and simulated a real company, which students could emulate in the classroom. This guide incorporates the role of the stock markets in with a simulation that can make real money for the class. This booklet was made available to teachers playing the stock market game throughout the state. The publisher of both guides is the Arkansas-Democrat Gazette. We also designed 10 special worksheets mailed to all participants of the SMG to enhance the learning portion of the exercise. SIFE wanted feedback on the effectiveness of the materials they produced.

The SIFE team also helped conduct twenty teacher training workshops using their materials. SIFE team members served as host/hostess; conducted sessions; provided group checking stations, helped set up displays and provide some lecture for the teachers. A total of 417 teachers participated in these workshops.

Finally SIFE team members set up play stations on the Internet version for students on the ASU Campus in formal class settings and informal student conferences providing additional services to students.

The program was evaluated based on four goals: (1) increasing teacher and college student knowledge and appreciation for economics and the stock market, (2) affecting teacher attitudes toward economics, (3) increasing student knowledge and appreciation for economics and the stock market, grades 4 through 12 and (4) informing area teachers about the services available in teaching about the stock market through SIFE and the ASU Center for Economic Education.

Using raw data, Chi-square and regression analysis techniques this program has been found to be successful, providing valuable insights that could help other instructors establish their economic education program.

INTRODUCTION

The Stock Market Game [SMG] is a nationally distributed tool for teaching basic economics and finance principles through the stock market. In Arkansas the SMG is distributed exclusively through the Arkansas Council on Economic Education [ACEE]. On the ASU Campus the program is co-sponsored by the ASU Students in Free Enterprises [ASU-SIFE] and the Center for Economic Education at Arkansas State University [CEE-ASU]. They have been using this simulation to introduce students to the stock market and the enterprise economy in three different classes:

1. Since 1992 the SMG has been used with a total of 27 classes of Economics totaling 1,793 students. These are both upper-division Economics courses (History of Economic Thought, Comparative Economic Systems, Economic Development) and introductory level courses (Economics of Social Issues). The purpose for using the game in this class is to provide information on the stock market to the students and to students to begin thinking about investing for their future.

2. A class in Personal Finance consisting of 23 business area majors is used this program in 1997.

The ASU SIFE team has been involved with the project in three ways. First the team has written two major publications and ten special activities' sheets distributed to students grades three through 12 participating in the program. The state had 1,200 teams in 1997-1998 alone.

The First major publication was the two volume notebook Economics in the Newspaper: Intermediate Grades and Economics in the Newspaper: Secondary Grades. These curriculum guides show teachers how to use the newspaper to teach about the economy and business in the general curriculum using a multi-disciplinary approach that includes math, science, language arts, government and business. It includes a variety of games, puzzles and activities designed to use newspapers as a teaching tool.

The second publication, entitled The News Cookbook Journal, presented the stock market in the framework of corporate activity and simulated a real company, which students could emulate in the classroom. This guide incorporates the role of the stock markets in with a simulation that can make real money for the class. This booklet was made available to teachers playing the stock market game throughout the state. The publisher of both guides is the Arkansas-Democrat Gazette. We also designed 10 special worksheets mailed to all participants of the SMG to enhance the learning portion of the exercise. SIFE wanted feedback on the effectiveness of the materials they produced.

The SIFE team also helped conduct twenty teacher training workshops using their materials. SIFE team members served as host/hostess; conducted sessions; provided group checking stations, helped set up displays and provide some lecture for the teachers. A total of 1,117 teachers participated in these workshops.

Finally SIFE team members set up play stations on the Internet for students on the ASU Campus in formal class settings and informal student conferences providing additional services to students.

The program was evaluated based on four goals: (1) increasing teacher and college student knowledge and appreciation for economics and the stock market, (2) affecting teacher attitudes

toward economics, (3) increasing student knowledge and appreciation for economics and the stock market, grades 4 through 12, and (4) informing teachers about the services and materials available in teaching about the stock market through SIFE.

These goals were assessed using raw data, Chi-square and regression analysis techniques and found successful, providing valuable insights that could help other instructors establish their economic education program.

Increasing Teacher and College Students Knowledge About Economics and the Stock Market

This research into the effectiveness of the SMG will focus on 22 credit courses, with 1,038 students enrolled. This group of test subjects [TS] was compared with a control group [CG] of eight classes of 291 students, who did not use the SMG approach. The control group consisted of 41 students in two classes in Personal Finance, 41 students in two classes of Macroeconomics and 209 students in Economics of Social Issues.

The first phase of this study is to learn if the SMG is successful in improving the understanding of and appreciation for basic economic concepts and the stock market. Several studies have shown the importance of teacher education in improving economic literacy among the general population (Highsmith 1974 and Baumol 1988). The Walstad?Soper study (Walstad 1988) concludes that each college level economics course completed by a teacher add .64 points to the predicted score of his or her students on the nationally normed Test of Economic Literacy. Teacher education is the most effective tool available to the economic education movement in its goal of improving the economic literacy of the general population. This paper will evaluate the effectiveness of the SMG as an instructional method using raw data, Chi?Square statistical analysis and regression analysis techniques. A general Stock Market Test [SMT] consisting of 25 questions about basic stock market terminology and background information was developed by the instructors. In addition the standardized Test of Economic Literacy (TEL.), published by the National Council on Economic Education (NCEE), was used as a pretest (form a) and a post test (form b) to every student in the study from our workshops. The test was used to monitor progress and supply data for this study.

We first looked at the impact of the SMG approach on the learning of economics among the three student treatment groups as compared with their counterparts in the control groups. An examination of the raw data, difference between the preinstruction test mean score (PETMS) and the post instruction test mean score (POTMS), clearly demonstrates that all three subject groups did learn some economics. Teachers in the test group improved their knowledge of economics and the stock market during the workshop. The difference between these mean scores ranged from a low of +2.41 in the Fall of 1995, to a high of +11.25 in a Spring of 2000 class on the TEL. The PETMS ranged from 10.95 (1995S) to a high of 30.42 (2000S) while the POTMS ranged from 18.23 (1994S) to a high of 36.56 (1999F).

A series of Chi?square tests (x2) of independence was used to decide if the difference between the PETMS and the POTMS, which improved every year, was significant using a critical value of x2 established at the .01 level of significance. Results were statistically significant, the null hypothesis was rejected, for every year except the Fall of 1993 and the Spring of 1994. Those

classes still showed some improvement, but it was not statistically significant. Teachers in the group did learn economics, since the difference in scores is not random.

The control groups did not fare as well as the treatment groups. Only two of the classes and one micro class showed significant improvement in economics. A second X2 test of significance was run comparing the test subject groups against the control groups. Both the teacher and micro experimental groups performed significantly better, at the .01 level, in learning economics than their counterparts in the control groups. Only the personal finance groups showed no significant difference in their performance in economics between the test and control groups. Since Personal Finance does not usually emphasize economics instruction this finding is not surprising. This finding is enhanced by the fact that all groups of classes were taught by the same instructor. The only major difference in the classroom presentation was the introduction of the stock market game and materials in the TS group.

A similar procedure was followed using the stock market test with even more startling results. The teacher and micro treatment groups learned more about the stock market, with one exception, than their counterparts in the control group. Only one teacher in the CG and none of the micro CG's improved by taking the course. The personal finance CG's fared much better, but the treatment groups still did significantly better on the post test than the CG. This is not surprising since personal finance does include a section on the stock market. What is important is that these students' learning did translate into a greater retention of the material using the SMG than a standard lecture approach to the materials even in the personal finance classes.

We also pre and post tested student groups and discovered that regular college students, who were exposed to the SMG approach in their instruction performed 21% better on the post test than their counterparts from a similar course taught by the same instructor.

A regression analysis was used to learn what factors were most influential in predicting success in the economics courses. After econometric testing for possible adverse effects of multicollinearity and heteroscedasticity a simultaneous multiple linear regression analysis was established using the following hypothesized relationships;

DMTEI	= b0 + b1PCE + b2PI + b3GPA + b4AGE + b5SEX + bPESM
DMTEL	= The difference betweent he pre and post test Tel Mean score.
PCE	= Previous Courses taken in Economics
PI	= Personal Interest in Economics
GPA	= Grade Point Average
AGE	= Age
SEX	= Male or Female
PESM	= Previous Experience with Stock Market

The results of the regression analysis indicated that the following factors were significant contributors to success in the class, at the .01 level; personal interest in economics, Grade Point Average and the experience with the SMG. This result is somewhat surprising. Previous course taken in economics was not significant. One would think the more economics a student had the better he or she would do in additional economics coursed. This can be explained in part because

73% of the subjects had no previous experience with economics. They still seemed to do as well as those with economics instruction. I am not surprised that interest in economics and GPA were significant. The more one likes economics, the better they should do in the course and the more intelligent the students, as reflected by GPA, the better they should do in the course. Clearly the most important finding is that students who played the Stock Market Game performed better than students in the control group. What a phenomenal motivational tool this proved to be in college instruction. Students in these classes gave a 42% higher rating to the practical value of the course, when the SMG was used as part of instruction.

Increasing Student, Grades 4 through 12, Knowledge / Appreciation for Economics and the Stock Market

We tested three groups of 78 students, grades five and six, who were taught by three graduates of our economics for teachers class who played the stock market game and used the instructional materials. We also found two groups of 46 students in the same schools to act as a control group. While this is a very limited sample size, we pre and post tested these students using the appropriate test of understanding, The Basic Economics Test [BET], and a modified 25 question stock market test. The experimental group outscored the control group by an average 35% on the BET and 81% on the SGT. A better understanding of both economics and the stock market was found in the treatment groups at the .01 levels, using the X2 test of significance. Since all of the classes contained a unit on economics in their social studies curriculum it suggests that the SMG approach worked as well with students as it did with their teachers.

We also ran a regression analysis with student groups. The results of the regression analysis indicated that the following factors were significant contributors to the amount of knowledge retained by students, at the .01 level; Grade point average, other courses taken in economics, personal interest in economics and the experience with the SMG and classroom materials. This result is not surprising.

Affecting Teachers Attitudes Toward Economics in the Curriculum

Teachers who have been exposed to the SMG approach clearly have a better understanding of basic economic concepts. We also wanted to know if they appreciate economics and its importance in the overall school curriculum, particularly as it relates to that teacher's specific curriculum and lesson planning. A recent national study concludes that:

> *"Teachers of economics believe that all teachers, themselves included, should be required to take more courses in economics than they have taken" (Baumol 1988).*

This interest in economic literacy is not shared by the profession as a whole since only 25% of the nations teachers have ever taken a single course in economics in either high school or college (Volker 1988).

Earlier research conducted at West Texas State University (Dale 1987) suggests that exposure to economics instruction techniques creates a favorable attitude toward economics in the curriculum among teachers. This favorable attitude is reflected in pre? and post?course survey responses. Such interest should result in more economics being taught. The same survey was used with teachers in the credit courses taught between 1992 through 1997. Although this is a required course, these students gave a mean rating of 4.68 on the Teacher Attitude Survey (TAS), with a maximum of 5.0. This suggests strong agreement with the idea that economics was an important part of the elementary curriculum. A slight but interesting difference came when teachers were asked if it were important that they; 1) understand basic economic principles and, 2) teach those principles in their own class setting. A majority of 61% of the elementary teachers stated that they would include some economics instruction in their curriculum because of the experience.

This attitude change came with an overwhelmingly favorable response to the course experience. On the Economic Education Course Evaluation (EECE) form 84% of the students rated the course outstanding in some or all respects. Similar ratings were noted of 96% in 1992; 97% in 1993; 98% in 1994; 87% in 1998 and 45% in 1999.

Teacher attitude toward economics is critical if teachers are to include economics in their curriculum plans. The Baumol-Highsmith study indicates that:

> *"Students share with their teachers many of the same goals for studying economics, but students believe that these goals are less important than teachers believe them to be" (Baumol 1988).*

If students are to be motivated to learn economics, their teachers must first be interested in the subject matter and capable of teaching it effectively. Students enrolled in economics courses are very favorable to the subject according to the Baumol?Highsmith study with 67% of the students indicating a favorable attitude toward economics subjects and only 13% disliking the subject. Excited enthusiastic teachers will improve the level of economic literacy.

Teachers leave the college experience with a better perception of economic, believing that economics should be an important part of their curriculum. This does not mean that this new attitude will be reflected in long?term changes in classroom behavior. The Economic Education Survey (EES) was mailed to all 1,117 graduates of the 1994 through 2001 workshops to decide; 1) if they were teaching more economics or less than before the workshop and 2) what factors were influencing their behavior. Of the surveys mailed, representing 100% of the population to be surveyed, 22.5% were returned with a notice that the addressee had moved, 60.13% were returned completed or partially completed and 16.82% have not been returned. This is a phenomenally high rate of return for a mail survey. This shows that the teachers still have strong interests in economics.

The survey asked teachers to set the amount of classroom time spent teaching economics as integrated into other subject areas. An overwhelming 83% of the intermediate teachers said that they did spend some time teaching economics with 13% suggesting that they spent 50% of their time or more teaching economics. Primary teachers spent an average of 17% of their time teaching economics. These statistics suggest that teachers, from the ASU workshops, are spending a significant amount of time with economic subjects and content materials. Most surveys show that

economics has not been given a high priority in the nation's schools, certainly much less than is proved by this group of teachers (Volker 1988). Sixty?one percent of the graduates showed that they had used the SMG in their classroom. Of those using SMG, 53% said they would use the SMG again with 26% saying they might use it again. Less than 4% said they would definitely not use the materials again. An additional 17% used the SMG materials developed by SIFE, but did not play the game. A modified form of the survey was distributed to six area principals, randomly selected, and they were each asked to give the survey to five classroom teachers on a random basis. This served as a control group. Forty?six percent of the control group surveys were returned. This group said that only 41% of the respondents included economics instruction in their classroom. On average 11% of the control group's curriculum was devoted to economics at the intermediate level and 3% at the primary level. Only 6% of the teachers had ever heard of the SMG and less than 1% used it in their classroom. A Chi square test of significance was run, at the .01 levels of significance. The null hypothesis was rejected at the .01 level indicating that workshop graduates were more likely to teach economics and use the SMG approach than the control group.

The rating was used to set up a regression analysis to learn what factors were most influential in predicting time spent on teaching economics. For this computation the information from teachers whose primary duty requires teaching economics was excluded from the test results. After econometric testing for possible adverse effects of multicollinearity and heteroscedasticity a simultaneous multiple linear regression analysis was established using the following hypothesized relationships;

TTEI = b0 + b1SM + b2PI + b3SAE + b4IA + b5SMG + bCSM
TTEI = Time teachers spend in economics instruction
SM = State Mandate Rating
PI = Personal Interest in Economics
SAE = School Administrators Encouragement Rating
IA = The International Paper Company Foundation Awards Program
SMG = The Experience with the Stock Market Game in College
CSM = Experience with SIFE Stock Related Materials

The results of the regression analysis indicated that the following factors were significant contributors to the amount of time teachers spend in economic instruction, at the .01 level; state mandates, personal interest in economics and the experience with the SMG and classroom materials. This result is not surprising. Workshop materials and experience are a significant predictor of time spent teaching about economics and the stock market. All respondents indicated support for economics in the curriculum.

Increasing Student Knowledge / Appreciation for Economics and the Stock Market

We tested three groups of 78 students, grades five and six, who were taught by three graduates of our economics for teachers class who played the stock market game and used the instructional materials. We also found two groups of 46 students in the same schools to act as a

control group. While this is a very limited sample size, we pre and post tested these students using the appropriate test of understanding, The Basic Economics Test [BET], and a modified 25 question stock market test. The experimental group outscored the control group by an average 35% on the BET and 81% on the SGT. A better understanding of both economics and the stock market was found in the treatment groups at the .01 levels, using the X2 test of significance. Since all of the classes contained a unit on economics in their social studies curriculum it suggests that the SMG approach worked as well with students as it did with their teachers.

Informing Teachers About the Services Available in Arkansas and Providing Quality Materials.

The CEE-ASU uses each of our teacher contacts to advertise various materials and programs available to educators each year. Every student that graduates from the ASU course is placed on our extensive mailing list, along with workshop participants. We find that 'word of mouth' advertising is our most successful contact that has allowed us to attract 17,991 teachers to our 167 workshops held since 1992. We believe that a combination of useful free materials and successful workshops is responsible for our outreach.

Other important factors have contributed to the overall success of the program. Much of the success of the model is due in large part to the long track record of the program. The business community has provided consistent support to the program, both financial and physical, that has not been equaled by many states with larger populations and more substantial financial resources.

CONCLUSIONS

The SMG approach is a successful tool in helping teacher, and student groups, understand both economics and the stock market. If included as part of an economics course it can enhance the learning of economics and help students better understand the role of the stock markets in society. Further, it is useful in motivating college students to study in order to retain more of the cognitive information presented in class.

REFERENCES

Armento, B.J. "A Study of Basic Economic Concepts Presented in EA Curriculum Guides, Grades 7-12." Journal of Economic Education 14 (Summer 1983).

Baumol, William J. and Robert J. Highsmith. "Variables Affecting Success in Economic Education: Preliminary Findings from a New Data Base." The American Economic Review 78, no.2 (1988): 257-262.

Bennett, N. "The Effective Primary-School Teacher: The Search for a Theory of Pedagogy." Teaching and Teacher Education 4 (1988): 19-30.

Hansen, W.L., and P. Saunders. "A Research and Evaluation Agenda for DEEP and Precollege Economic Education: A Commentary." Journal of Economic Education (Winter 1988): 14-51.

Watts, M.W. "A Statewide Assessment of Precollege Economic Understanding and DEEP." Journal of Economic Education 16 (Summer 1985):225-37.

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