DOCUMENT RESUME

ED 305 312 SO 019 802

AUTHOR McKinney, C. Warren; And Others
TITLE Preservice Elementary Education Majors' Knowledge of Economics.
PUB DATE 88
NOTE 27p.; For related documents, see SO 019 803-805.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Economics Education; Educational Improvement; Educational Research; *Education Majors; *Elementary Education; Elementary School Teachers; Higher Education; *Knowledge Level; Methods Courses; *Preservice Teacher Education; *Social Studies; Teacher Effectiveness; Teacher Improvement; Teacher Qualifications

ABSTRACT

Evidence that elementary school children possess inadequate economic knowledge is presented, and four arguments are outlined for the importance of economics education in the public schools: (1) economic knowledge is essential to civic duty in a democracy; (2) economic knowledge is important when individuals attempt to function rationally in a complex, industrial society; (3) economic knowledge is unlikely to be acquired without instruction; (4) prior research indicates that children in the earliest grades can learn economic concepts if exposed to an appropriate social studies curriculum. It is suggested that elementary students perform poorly on economics achievement tests due to inadequate economics knowledge possessed by their teachers. This study is designed to assess preservice elementary education teachers' knowledge of economics. Form A of the "Test of Economic Literacy" was administered to 113 students enrolled in social studies methods courses at a southern university. This 46-item test was subdivided into the following seven content areas: the basic economic problem, economic systems, microeconomics, macroeconomics, the world economy, economic institutions, and concepts for evaluating economic actions and policies. Student performance was evaluated and presented in nine tables detailing the percentage of correct responses by content area. Using 70 percent as the cutoff for a passing grade, only three students passed the test. The relationship between teacher knowledge and student achievement is discussed, and additional economics training for teachers is recommended. A 17-item bibliography is included. (GEA)

Preservice Elementary Education Majors' Knowledge of Economics

C. Warren McKinney

Oklahoma State University

A. Guy Larkins

University of Georgia

Kay C. McKinney

Stillwater (OK) Middle School

Allison C. Gilmore

Mercer University-Atlanta

Mary Jane Ford

University of Southwestern Louisiana

Running head: ECONOMICS

Abstract

The authors present evidence from the research literature that elementary school children possess inadequate knowledge of economics. Four arguments are given for the importance of economic education in the public schools. It is argued that poor pupil performance on economics achievement tests might reflect vacuous social studies texts in the primary grades and an inadequate stock of economics knowledge possessed by teachers. Data from the present study support the latter claim; the mean score for this sample of preservice teachers was less than 50% on the Test of Economic Literacy. It is then argued that providing teachers with additional training in economics could increase the stock of economic knowledge possessed by their students.

Preservice Elementary

Education Majors Knowledge of Economics

Eighteen years ago, McKenzie (1970) found that children in grades four and seven had "grossly distorted" economic knowledge. Many believed that God controlled the price of goods, that most factories and stores were owned by the government, that the government rationed goods such as bubble gum, that average citizens would be better off if they had a machine for printing money, and that a house cost about $100. Recent attacks on the public schools echo the belief that American children are undereducated in all academic subjects, including history and the social sciences (Magnet, 1988). Prior research by the current authors (Larkins, Hawkins, & McKinney, 1985) supports that belief.

Should the economic ignorance of elementary school children trouble us? We think so, for several reasons. First, economic knowledge is essential to civic duty in a democracy. Public issues that citizens have the right and duty to address have economic causes and consequences. Rational decisions about public policy concerning the national debt, foreign aid, social welfare programs, military spending, and taxes cannot be made out of a fund of economic ignorance. Second, public policy aside, economic knowledge is important when individuals attempt to function rationally in a complex, industrial society. Decisions about career goals, employment, family finances, savings, investment, and retirement can be informed by economic knowledge. Third,

economic knowledge is unlikely to be acquired without instruction. We cannot depend on economic ignorance to be self-correcting. Fourth, prior research (Larkins, 1968) indicates that children in the earliest grades can learn economic concepts if exposed to an appropriate social studies curriculum.

How might we account for children's lack of knowledge of history and the social sciences in general, and economics in particular? Children's economic knowledge, like other achievement, is influenced in part by variables which are not controlled by schools, such as the academic ability of the child, out-of-school experience, and family history. Two important variables, however, are obviously related to schooling--the curriculum, including textbooks, that children are required to study, and the stock of knowledge possessed by teachers.

A recent study (Larkins, Hawkins, & Gilmore, 1987) found that social studies texts in the primary grades contain vacuous, superficial, redundant, and superfluous information. Too often texts merely rearrange the information already possessed by young children, rather than add to the children's stock of knowledge. We are convinced that one reason children are ignorant of important social science knowledge, including economics, is that texts too often contain little that is worth learning.

Not all texts are vacuous. The original editions of Science Research Associates' elementary social studies series, Our Working World, contained substantial economic information at all

elementary grade levels, including grade one. That series, however, is seldom found in public schools today, and none of the series that we examined contain the quantity or quality of information found in the older SRA texts. We suspect that part of the decline in popularity of Our Working World is that elementary school teachers are not well-grounded in economics. We believe that when teachers lack an adequate knowledge of history and the social sciences, they reject texts which contain substantial information.

Is our assumption about elementary teachers' lack of knowledge correct? Larkins, Hawkins, and McKinney (1985) examined social studies texts in grades one through four, then wrote a test to reflect the content of those texts. The test was administered to approximately 350 preservice elementary teachers enrolled at major colleges in two southern states. If grading scales usually applied in the elementary school were applied to this sample of preservice teachers, only 3% would have received As, 25% Bs, 39% Cs, 23% Ds, and 10% Fs. It should be kept in mind that this instrument has content validity for grades one through four, and should be an embarrassingly simple test for college students.

Kleg (1987) also tested the general social studies knowledge of preservice elementary teachers, but his instrument differed from Larkins, Hawkins, and McKinney (1985) in that it contained an eight-item economics subtest adapted from the Test of Economic Literacy, as well as subtests in history, political science, and

geography. The four subtests combined contained 40 items, which were administered to 98 students majoring in elementary education at a midwestern university. Kleg's sample obtained a mean score of 62% on the total test, and averaged 5.13 (66%) on the eight items on the economics subtest.

Although Kleg (1987) extended the findings of Larkins, Hawkins, and McKinney (1985), results from an eight-item economics test are hardly convincing. Nor should we generalize from preservice to inservice teachers. Those concerns are relieved somewhat by examining one more study. McKenzie (1971) administered the Test of Economic Literacy to 144 inservice teachers in three Virginia school districts. His results were similar to those reported in studies summarized above. McKenzie's sample averaged approximately 30 correct answers out of 50 items (60%).

It is apparent that direct evidence about elementary teachers' stock of economics knowledge is limited. Indirect evidence is supplied by Walstad and Watts (1985) who reviewed state surveys of economic education. An Ohio survey reported that 54% of teachers (K-12) had no formal training in economics, and only 25% had taken a single course. A survey in Idaho reported that 73% of the elementary teachers had never taken an economics course. In Wisconsin, 43% of the elementary teachers surveyed had no economics coursework. Virginia requires one economics course for elementary certification. In Indiana, 75% of the fifth-grade

teachers had taken no more than one economics course. Walstad and Watts (1985) summarize their review thus: "In general, the surveys of elementary teachers found that about half had no course work and another 25% percent had taken just 1 course" (p. 139).

Clearly, information about the economic knowledge possessed by elementary teachers is limited. Additional information is needed. The current study addresses that problem.

Procedures

Sample

One hundred-thirteen students who attended a university located in a southern state and were enrolled in sections of a social studies methods course composed the sample. All subjects were female, and most were white. Approximately 10% were classified as nontraditional in that they were over the age of 22. The economics test contained a bibliograhic section which included an item concerning prior economics instruction. Approximately 90% of the subjects either left that item blank or checked "no".

Instumentation

Data were gathered using the 46-item, Form A, of Test of Economic Literacy, which is published by the Joint Council on Economic Education (Soper, 1979). In 1977 the Joint Council released a major report by the National Task Force on Economic Education, the Master Curriculum Guide for the Nation's Schools, part 1, A Framework for Teaching Economics: Basic Concepts. In recent years, major curriculum efforts for the public schools, K-

12, have been based on that framework. Test of Economic Literacy is an updated version of the older Test of Economic Understanding, and is based on the JCEE Framework. Validity of the TEL is discussed in several publications, including Soper (1979) and Walstad and Buckles (1983). The alpha for both forms of the TEL is reported as .87 (Walstad & Buckles, 1983, p. 17). The test is subdivided into the following seven content areas: (a) the basic economic problem, (b) economic systems, (c) microeconomics: resource allocation and income distribution, (d) macroeconomics: economic stability and growth. (e) the world economy, (f) economic institutions, and (g) concepts for evaluating economic actions and policies. Three of these content areas have only one or two items.

Findings

The frequency of the number of correct responses are presented in Table 1. Scores ranged from six correct responses to 37 correct responses. Fifty-two percent of the students responded correctly to 21 or less of the 46 items. Using the traditional 70% cutoff for a passing grade, only three students would have passed the test. The mean raw score was 21.68 with a standard deviation of 6.67.

Insert Table 1 about here

The number of correct responses by item for the university

sample and the percentage of correct responses for the university sample, high school students who had taken an economics course, and high school students who had not taken an economics course are presented in Table 2. On only 20 items did 50% or more of the students respond correctly. When compared to the high school students (n=8,660), it is clear that the college sample scored slightly better than high school students who had not taken an economics course. However, the university students' performance was inferior to the high school students who had taken an economics course. If we take into account chance correct response, it is clear that substantially less than half of the university students could respond correctly to items on this instrument.

Insert Table 2 about here

The percentage of correct responses for the four questions that measured "the basic economic problem" are presented in Table 3. Nearly one-half of the students responded correctly to only one of the four questions. Eighty-four percent of the students knew that as income increases, the rate and the amount of taxes increase. Only 51% knew that every economic system has to deal with the problem of scarcity. Only 16% could identify examples of land, labor, and capital. Forty percent could recognize an example of opportunity cost.

Insert Table 3 about here

Six questions are related to the second content area, economic systems. Slightly over 40% of the students responded correctly to half of these items (see Table 4). Approximately 70% knew that active competition is essential to a market economy, that locations benefit from specialization and exchange, and that the purpose of profits is to provide incentives for businesses to produce what consumers want. Approximately 50% knew that higher rents will most likely lead to an increase in the supply of rental housing over time. Approximately 50% knew that all economic systems have to answer the question as to what goods and services will be produced, and specialization and exchange will most likely lead to the production of more goods and services.

Insert Table 4 about here

Fourteen items are related to the third content area, microeconomics: resource allocation and income distribution. Performance was best on two items. The first is related to the law of supply and demand. The second tests for belief that an increase in wages for teenagers would result in fewer teenagers being hired. Performance was poor on items related to pricing within an oligopolistic industry, the effect of a monopoly on

efficiency, the most likely cause of low income within the United States, and recognition of a progressive income tax (see Table 5).

Insert Table 5 about here

There are 14 items related to macroeconomics, the fourth content area. Students performed well on only one item--that the gross national product is the single best measure of the total economic output in the United States. Only 20% of the students knew that lenders would be hurt more by unexpected inflation than would farmers, debtors, or manufacturers; and that the Federal Reserve Board generally tries to increase the money supply when it wants to fight unemployment (see Table 6).

Insert Table 6 about here

Only one item is related to the fifth content area, the world economy. Twenty-nine percent of the students responded correctly to this item. This question is concerned with the relationship between tariffs and employment within protected industries (see Table 7).

Insert Table 7 about here

Two questions are related to the sixth content area,

economic institutions. Fewer than half of the students responded correctly to either of these items (see Table 8). One item tests the advantage of the corporate form of business organization. The other item tests whether labor unions strenghtened the bargaining power of unionized workers.

Insert Table 8 about here

Two questions are related to the seventh content area, concepts for evaluating economic actions and policies. Approximately 94% of the students missed one or both of these items (see Table 9).

Insert Table 9 about here

Taken as a whole, results of this study can summarized through simple descriptive statistics. The mean raw score for our sample was 21.68 out of 46 items. The standard deviation was 6.67. Percent of correct response by item ranged from 14.2 to 83.3. On the average, approximately 47% of our sample of preservice teachers correctly responded to questions on the TEL. If we take into account chance correct responses, it is clear that substantially less than half of our subjects could respond correctly to items on this instrument.

Discussion

It is difficult to escape the conclusion that preservice elementary teachers in our sample do not possess an adequate stock of economic knowledge to teach the concepts in the Master Curriculum Guide recommended by the Joint Council on Economic Education. Should we, therefore, recommend that additional training in economics be required of elementary school teachers? Our answer depends, in part, on whether such training improves the economic knowledge of elementary school children. Would greater teacher knowledge lead to increased student knowledge? Several studies reported in the literature are relevant. Based on limited evidence, the answer appears to be "yes".

Walstad and Watts (1985) conducted a statewide study involving over 150 schools in Indiana. Economics achievement data were gathered at four grade levels--5, 8, 11, and 12. Among his findings, Watts reported that pupil achievement was related to the time-lapse since the last economics course taken by teachers. The more recent the course, the higher the pupil achievement.

Buckles and Freeman (1984) analyzed "the effect of a traditional comprehensive K-12 DEEP project at all grade levels over a three-year period in one school district" (p. 5). They assessed the effect of the DEEP program on student achievement, but did not separate the effects of teacher training on pupil achievement from the direct effects of the curriculum. Nevertheless, they concluded: "This study does demonstrate that

a traditional DEEP process of in-service training and curriculum change can be extremely effective in increasing economic understanding..." (p. 19).

Chizmar and McCarney (1984) evaluated the implementation of "Trade-Offs". Teachers in the sample received either a one-day workshop, a three-day workshop, a semester workshop, or no training. The total sample included 555 students in grades four, five, and six. The original sample contained approximately 1,200 students, but data for more than 600 were incomplete. Students of teachers who received the semester workshop outscored students of teachers who received the one-day workshop by an average of 11.86 points. Students of teachers who received the three-day workshop outscored students of teachers who received the one-day workshop by an average of 3.11 points. In this study, the effect on pupil achievement of teacher training in economics appears clear-cut. Other studies, using a variety of samples and research designs also indicate a positive relationship between teacher knowledge of economics a d pupil achievement (Schober, 1984; Highsmith, 1974; Thornton & Vrdeveld, 1977; Walstad, 1980). We located one study which found no relationship between teacher knowledge and pupil achievement (Lawson & O'Donnell, 1986).

We recommend that school districts, state departments of education, and colleges of education which accept the arguments in favor of economic education in the elementary grades require additional training in economics for teachers.

References

Buckles, S., & Freeman, V. (1984). A longitudinal analysis of a developmental education program. The Journal of Economic Education, 15(1), 5-10.

Chizmar, J. F., & McCarney, B. J. (1984). An evaluation of a "Trade-Offs" implementation using canonical estimation of joint education production functions. The Journal of Economic Education, 15(1), 11-20.

Highsmith, R. (1974). A study to measure the impact of in-service institutes on the students of teachers who have participated. The Journal of Economic Education, 5(2), 77-81.

Kleg, M. (1987). General social studies knowledge and critical thinking among preservice elementary teachers: A comparative survey. International Journal of Social Education, in press.

Larkins, A. G. (1968). Assessing achievement on a first-grade economics course of study. Unpublished doctoral dissertation, Utah State University, Logan, UT.

Larkins, A. G., Hawkins, M. L., & Gilmore, A. C. (1987). Trivial and noninformative content of elementary social studies: A review of primary texts in four series. Theory and Research in Social Education, 15(4), 299-311.

Larkins, A. G., Hawkins, M. L., & McKinney, C. W. (1985, November). Preservice teachers' knowledge of social studies content in the primary grades: Phase two. Paper presented at the meeting of the National Council for the Social Studies, Chicago.

Lawson, L. D., & O'Donnell, M. G. (1986). Identifying factors that influence the learning of economics: A sixth-grade case study. The Journal of Economic Education, 17(3), 177-185.

Magnet, M. (1988). How to smarten up the schools. Fortune, 117(3), 86-94.

McKenzie, R. B. (1970). The economic literacy of elementary school pupils. Elementary School Journal, 71, 26-35.

McKenzie, R. B. (1971). An exploratory study of the economic understanding of elementary school teachers. The Journal of Economic Education, 3(1), 26-31.

Schober, H. M. (1984). The effects of inservice training on participating teachers and students in their economics classes. The Journal of Economic Education, 15(4), 282-295.

Soper, J. C. (1979). Test of economic literacy: Discussion guide and rationale. New York: Joint Council on Economic Education.

Thornton, D. L., & Vrdeveld, G. M. (1977). In-service education and its effects on secondary students: A new approach. The Journal of Economic Education, 3(2), 93-99.

Walstad, W. B. (1980). The impact of "Trade-Offs" and teacher training on economic understanding and attitudes. The Journal of Economic Education, 12(1), 41-48.

Walstad, W. B., & Buckles, B. (1983). The new economics tests for the college and pre-college levels: A comment. The Journal of Economic Education, 14(2), 17-23.

Walstad, W. B., & Watts, M. (1985). Teaching economics in the schools: A review of survey findings. The Journal of Economic Education, 16(2), 135-146.

Table 1
Frequency of Correct Responses

Correct Responses	Frequency	Percent	Cumulative Percent
6	1	.9	.9
9	1	.9	1.8
10	2	1.8	3.5
11	2	1.8	5.3
12	4	3.5	8.8
13	2	1.8	10.6
14	1	.9	11.5
15	7	6.2	17.7
16	9	8.0	25.7
17	4	3.5	29.2
18	8	7.1	36.3
19	3	2.7	38.9
20	5	4.4	43.4
21	10	8.8	52.2
22	7	6.2	58.4
23	2	1.8	60.2
24	7	6.2	66.4
25	5	4.4	70.8
26	7	6.2	77.0
27	3	2.7	79.6
28	5	4.4	84.1
29	4	3.5	87.6
30	1	.9	88.5
31	2	1.	90.3
32	2	1.L	92.0
33	5	4.4	96.5
34	1	.9	97.3
36	1	.9	98.2
37	2	1.8	100.0
Total	113	100.0	

Table 2
Number of Correct Responses by Item

Item	Content	University		High School	
		No. Correct	Percent	With	Without
1	Basic Economic Problem	16	14.2	20.8	4.8
2	Basic Economic Problem	51	45.1	60.1	40.1
3	Basic Economic Problem	40	35.4	41.9	19.1
4	Economic Systems	58	51.3	71.0	51.8
5	Economic Systems	76	67.3	67.2	53.6
6	Economic Systems	79	69.9	70.2	56.5
7	Economic Systems	57	50.5	55.7	44.3
8	Economic Systems	78	69.0	62.1	54.9
9	Economic Systems	59	52.2	52.5	48.8
10	Microeconomics	42	37.2	40.7	30.4
11	Microeconomics	56	49.6	53.9	47.8
12	Microeconomics	57	50.4	59.0	46.3
13	Microeconomics	76	67.3	72.4	63.2
14	Microeconomics	81	71.7	57.6	52.5
15	Microeconomics	93	82.3	81.2	75.4
16	Microeconomics	74	65.5	63.1	53.0
17	Microeconomics	60	53.1	49.5	38.8
18	Microeconomics	44	38.9	50.6	35.9
19	Basic Economic Problem	84	74.3	81.8	78.4
20	Microeconomics	38	33.6	44.0	35.4
21	Microeconomics	24	21.2	30.2	18.6
22	Microeconomics	69	61.1	69.7	60.0
23	Microeconomics	57	50.4	49.9	41.0
24	Microeconomics	53	46.9	54.7	45.9
25	Macroeconomics	61	54.0	65.6	53.0
26	Macroeconomics	83	73.5	70.9	55.6
27	Macroeconomics	70	61.9	69.3	59.3
28	Macroeconomics	52	46.0	53.6	44.7
29	Concepts for Evaluating	31	27.4	46.5	33.7
30	Macroeconomics	23	20.4	32.8	20.5
31	Macroeconomics	58	51.3	53.2	40.2
32	Macroeconomics	72	63.7	70.5	55.0
33	Macroeconomics	44	38.9	50.9	33.9
34	Macroeconomics	23	20.4	36.7	24.1
35	Macroeconomics	39	34.5	39.5	33.1
36	Macroeconomics	54	47.8	54.9	43.8
37	Macroeconomics	39	34.5	33.1	23.7
38	Macroeconomics	41	36.3	35.7	30.0
39	Macroeconomics	49	43.4	46.6	34.8
40	Macroeconomics	50	44.2	40.4	25.3
41	Macroeconomics	44	38.9	44.5	30.0
42	Macroeconomics	37	32.7	41.4	21.5
43	The World Economy	33	29.2	43.3	29.8
44	Economic Institutions	43	38.1	42.6	29.8
45	Concepts for Evaluating	29	25.7	20.0	20.9
46	Economic Institutions	51	45.1	44.6	32.5

Table 3

Percentage of Correct Responses by Content Area: The Basic Economic Problem

Number of Correct Responses	Frequency	Percent	Cumulative Percent
0	7	6.2	6.2
1	48	42.5	48.7
2	36	31.9	80.5
3	17	15.0	95.6
4	5	4.4	100.0
Total	113	100.0	

Mean=1.690

Standard Deviation=.955

Table 4

Percentage of Correct Responses by Content Area: Economic Systems

Number of Correct Responses	Frequency	Percent	Cumulative Percent
0	2	1.8	1.8
1	10	8.8	10.6
2	16	14.2	24.8
3	19	16.8	41.6
4	33	29.2	70.8
5	22	19.5	90.3
6	11	9.7	100.0
Total	113	100.0	

Mean=3.602

Standard Deviation=1.503

Table 5

Percentage of Correct Responses by Content Area: Microeconomics: Resource Allocation and Income Distribution

Number of Correct Responses	Frequency	Percent	Cumulative Percent
1	2	1.8	1.8
2	5	4.4	6.2
3	9	8.0	14.2
4	8	7.1	21.2
5	12	10.6	31.9
6	15	13.3	45.1
7	2	1.8	46.9
8	9	8.0	54.9
9	21	18.6	73.5
10	12	10.6	84.1
11	11	9.7	93.8
12	5	4.4	98.2
13	1	.9	99.1
14	1	.9	100.0
Total	113	100.0	

Mean=7.292

Standard Deviation=3.067

Table 6

Percentage of Correct Responses by Content Area: Macroeconomics: Economic Stability and Growth

Number of Correct Responses	Frequency	Percent	Cumulative Percent
1	1	.9	.9
2	1	.9	1.8
3	6	5.3	7.1
4	5	4.4	11.5
5	10	8.8	20.4
6	17	15.0	35.4
7	17	15.0	50.4
8	24	21.2	71.7
9	9	8.0	79.6
10	9	8.0	87.6
11	7	6.2	93.8
12	5	4.4	98.2
13	1	.9	99.1
14	1	.9	100.0
Total	113	100.0	

Mean=7.425

Standard Deviation=2.503

Table 7

Percentage of Correct Responses by Content Area: The World Economy

Number of Correct Responses	Frequency	Percent	Cumulative Percent
0	80	70.8	70.8
1	33	29.2	100.0
Total	113	100.0	

Mean=.292

Standard Deviation=.457

Table 8

Percentage of Correct Responses by Content Area: Economic Institutions

Number of Correct Responses	Frequency	Percent	Cumulative Percent
0	41	36.3	36.3
1	50	44.2	80.5
2	22	19.5	100.0
Total	113	100.0	

Mean=.832

Standard Deviation=.731

Table 9

Number of Correct Responses by Content Area: Concepts for Evaluating Economic Actions and Policies

Number of Correct Responses	Frequency	Percent	Cumulative Percent
0	60	53.1	53.1
1	46	40.7	93.8
2	7	6.2	100.0
Total	113	100.0	

Mean=.531

Standard Deviation=.631