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ABSTRACT

This study explored the effect of experiential and experience-based approaches to learning and instruction on transitional first grade students' (a) acquisition and use of economic concepts and (b) economic reasoning ability as indicated by the presence or absence of misconceptions about economic concepts. A pretest-posttest control group design was utilized, and students were randomly assigned to two groups. One group used dictation of language experience stories, while the other used an inquiry-oriented debriefing session following 12 classroom market days. No significant differences existed between the groups at the pretest. At the posttest, students in the experience-debriefing group scored significantly higher on an understanding-of-economic-concepts measure than the experience-dictation group. After adding a debriefing-only control group, statistically significant differences were revealed at the posttest: (1) the combined means of the experience-debriefing and debriefing-only groups were higher than the mean of the experience-dictation group; and (2) the mean of the experience-debriefing group was higher than the mean of the debriefing group. The findings suggested that experience-based approaches were superior to experiential approaches in teaching economic concepts and that experience-based economic instruction could foster the development of economic reasoning ability among young children by dispelling misconceptions. Implications from the study discussed the need for early economic education, concept instruction across the disciplines, and early childhood education. Contains 28 references. (Author/CK)

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**ECONOMIC CONCEPT ACQUISITION:
EXPERIENTIAL VERSUS EXPERIENCE-BASED LEARNING AND INSTRUCTION**

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Abstract

This study explored the effect of experiential and experience-based approaches to learning and instruction on transitional first grade students' (a) acquisition and use of economic concepts and (b) economic reasoning ability as indicated by the presence or absence of misconceptions about economic concepts.

A pretest-posttest control group design was utilized. Students were randomly assigned to two groups. The experience-dictation (experiential learning) group participated in twelve classroom market days with each market day followed by the dictation of language experience stories, while the experience-debriefing (experience-based learning) group participated in twelve classroom market days with each market day followed by an instructor-led, inquiry-oriented debriefing session. At pretest and posttest, students were interviewed in order to probe their understanding of ten basic economic concepts and to determine their proclivity to use the concept of cost-benefit analysis in a personal decision making situation.

T-tests for independent samples were used to analyze the data. There were no significant differences between groups at pretest. At posttest, students in the experience-debriefing group scored significantly higher on an understanding-of-economic-concepts measure than the experience-dictation group. No significant difference was found between groups on the use-of-cost-benefit-analysis measure. The percentage of students giving correct, misconception-free responses on the understanding-of-economic-concepts measure increased dramatically from pretest to posttest for students in the experience-debriefing group but not for the experience-dictation group.

In order to test a rival hypothesis, a debriefing-only control group was added to the study. Again, there were no significant differences between groups at pretest. On both the understanding-of-economic-concepts posttest and the use-of-economic-reasoning posttest, the mean for the debriefing-only group fell between the means of the experience-dictation and experience-debriefing groups. Planned (a priori) comparisons revealed the following statistically significant differences at posttest on the understanding-of-economic-concepts measure: (1) the combined means of the experience-debriefing and debriefing-only groups were higher than the mean of the experience-dictation group and (2) the mean of the experience-debriefing group was higher than the mean of the debriefing-only group. Thus, there is evidence that the combination of market day experience plus debriefing is better than economics instruction alone in promoting students' understanding of economic concepts.

Overall, the study supports Kourilsky's (1983) claims about the superiority of experience-based over experiential approaches to teaching economic concepts. It also suggests that experience-based economic instruction can foster the development of economic reasoning ability among young children by dispelling their misconceptions about economic concepts. Implications for early economic education, concept instruction across the disciplines, and early childhood education are discussed.

**ECONOMIC CONCEPT ACQUISITION:
EXPERIENTIAL VERSUS EXPERIENCE-BASED LEARNING AND INSTRUCTION**

Only a few researchers have explored the economic thinking of preschool and primary-grade children. Of these, most (e.g., Ajello et al., 1987; Armento, 1982; Berti et al., 1986; Burris, 1976; Fox, 1978; Furth, 1980; Schug, 1981, 1983; Schug and Birkey, 1985; and Strauss, 1952) have undertaken interview studies that look for developmental patterns in economic reasoning. The findings of these studies suggest that economic thinking develops in an age-related, stage-like sequence. Summarizing across the aforementioned studies, Armento (1986) describes children's concept response patterns as progressing "from egocentric to objective; from tautological, literal, and rule-oriented to generalizable; from concrete to abstract; and from inconsistent and narrow to consistent, flexible, and accurate" (p. 89).

According to Schug (1983), many young children exhibit unreflective economic reasoning characterized by (a) a preoccupation with the physical characteristics of the object or process being discussed, (b) egocentric thinking, (c) confusion in identifying causes and effects, and (d) an inclination to treat variables as interchangeable. Research on economic reasoning has demonstrated that young children tend to have many misconceptions about basic economic concepts indicative of unreflective economic reasoning. Specifically, young children have problems understanding and/or using such concepts as wants, scarcity, money, monetary value, exchange, change, profits (and what store owners do with the money received from customers), opportunity cost, and cost-benefit analysis.

Armento (1982) found that children less than five years old tend to give inaccurate responses and justifications for their responses when asked whether people have everything they want. She labels some responses as tautological (e.g., "Yes, people have everything they want because they always do") and others as moralistic (e.g., "No, people don't have everything they want, because Jesus don't want them to") (p.88).

In an experiment conducted by Schug (1983), young children's thinking about the value of money was often inflexible and based on the physical characteristics of the genuine and play dollar bills shown to them. Typical responses indicated that the genuine dollar bill had value because it was "real" and that the play dollar bill had no value because it was "not real" (p.143). The children commonly mentioned the size, shape, and color of the dollar bill when explaining why one dollar bill was more valuable than the other.

Burris (1976), Fox (1978), Furth (1980), and Strauss (1952) discovered that many young children fail to grasp the reciprocal nature of transactions between buyers and sellers in stores and the role of money in exchange. For example, many of the children interviewed in these studies thought that buyers gave money to sellers in order to avoid breaking the law or to do what was right. Store owners were seen as providers of money to buyers, and "change" was the label given to the money received.

In a study by Furth (1980), children approximately ages six through eight understood the role of money in exchange but could not explain what happened next with the money. The children did not understand what the store owner did with the money received from his/her customers.

Kourilsky (1987) points out that many primary and intermediate grade students have difficulty understanding the concept of opportunity cost. Instead of thinking of opportunity cost as one's next best alternative, elementary school children often consider opportunity cost to be all of the alternatives that one gives up when making a decision.

A recent empirical study by Laney (1990) indicates that young children have difficulty transferring the concept of cost-benefit analysis to their personal decision making. As evinced by their responses to a hypothetical dilemma presented at pretest and posttest, third grade students profited very little from verbal and/or imaginal (imagery-related) instructional strategies aimed at increasing students' proclivity to use cost-benefit analysis. Laney suggested that third graders might not be developmentally ready for instruction in economic decision making.

Most of the research on children's economic reasoning cited above has focussed on spontaneous concept development that occurs as children experience economics in their daily lives. According to Schug (1981), an important question for future research is to determine whether economics instruction fosters the development of economic reasoning ability. Ajello et al. (1987), Berti et al. (1986), Laney (1989), Armento (1986) and Kourilsky (1983) provide guidance on how to design economic instruction to achieve this end at the elementary school level.

Berti et al. (1986) and Ajello et al. (1987) discovered that economic training changed third graders' conceptions of (a) profit and (b) work and profit respectively. In the study by Berti et al., progress toward economic understanding was not dramatic, but it occurred when children (a) were given correct information about economic ideas and (b) found discrepancies between predicted and actual outcomes of economic events. In addition, Berti et al. suggest that having children talk about economic concepts may contribute to their progress in mastering those concepts.

Laney's (1989) findings suggest that real-life experiences are better than vicarious experiences for promoting first graders' learning and retention of the economic concept of opportunity cost. Laney explains his results by suggesting that real-life experiences make economic concepts more meaningful and thus more memorable to students.

According to Armento (1986), children experience economic situations and events on a daily basis. She maintains (a) that play provides the best means for young children to explore their economic world and (b) that the economic content emphasized during these early years is best taken from happenings in the children's everyday lives (e.g., buying, selling, making goods and services).

Kourilsky (1983) stresses that it is important for elementary school students to participate in economic experiences that are

both personal and active. In defining the role of experience in economic concept acquisition, she distinguishes between experiential learning and experience-based learning. She states that experience with economic concepts (i.e. experiential learning) is not sufficient. Substantive acquisition of economic concepts is dependent on experience-based learning, where experiences are followed by debriefings/discussions in which situations are analyzed and economic concepts derived. These debriefings serve to focus students' attention on relevant ideas. To support her assertion, Kourilsky offers the following analogy: "Most of you played Monopoly as children, but probably few of you learned an extensive amount of economics from participating in the game" (p. 5).

Armento (1986) also downplays experience, in and of itself, as the cause of a child's direct and predictable learning. She states that the meanings constructed by a child from his/her economic experiences are most probably attributable to the child's cognitive capabilities at the moment, the value and motivational orientation of the child, the nature of the experience, and the child's prior knowledge.

Marilyn Kourilsky has authored three experience-based economic education programs for elementary school students--Kinder-Economy (grades K-2), Mini-Society (grades 3-6), and the Co-Learner Parent Education Program. Studies by Kourilsky (1977, 1981) and Cassuto (1980) have demonstrated the effectiveness of these programs in increasing participants' economic cognition, but no previous study has tested Kourilsky's (1983) assertion regarding the superiority of experience-based over experiential approaches to economic education.

Research Questions

This study attempts to answer two research questions. The first question is based on a suggestion for future research from Schug (1981). Does instruction in economics foster the development of economic reasoning ability? Stated more specifically for the purposes of this study, what misconceptions do transitional first grade students have about economic concepts, and can those misconceptions be corrected through economics instruction? The second research question tests the assertions of Kourilsky (1983) regarding experiential versus experience-based learning. Is experience-based learning superior to experiential learning in promoting the acquisition and use of economic concepts among transitional first grade students?

Method

Transitional first grade students were chosen as the population of interest for two reasons. First, because of his/her maturational age level, the transitional first grader is likely to have many misconceptions about basic economic concepts. Second, transitional first grade classrooms make use of developmentally appropriate practices, and the treatment conditions utilized in this study were designed in accordance with such practices.

All of the transitional first grade students in one elementary school in north central Texas participated as subjects in the study. Thirty-one students made up the sample--twenty-five Caucasian, five African-American, and one Hispanic. Twenty of these students were males, and eleven were females. None of the students had received instruction in economics prior to the study.

Students' eligibility for placement in transitional first grade was determined at the end of their kindergarten year. Placement in the program was dependent (1) on the student being six years of age by September 1 and (2) on the student having an approximate behavior age of five and one-half years as indicated by his/her score on an individually-administered readiness test, the "Maturational Assessment Test" (Hull House Publishing Company, 1988), given by the school counselor. In addition to the two main selection criteria listed above, parents' and teachers' observations were also taken into account. Parental permission was obtained before a child's final placement in the program.

Students placed in transitional first grade were randomly assigned to one of two classrooms at the beginning of the school year. At the beginning of the spring semester, the investigator randomly assigned the two treatment conditions to the two randomly-formed classrooms.

The study employed a pretest-posttest control group design. Subjects were pretested and posttested on their understanding of economic concepts and on their use of cost-benefit analysis. The two treatment conditions consisted of an experience-dictation (experiential learning) group and an experience-debriefing (experience-based learning) group. The pretreatment, treatment, and posttreatment phases of the study are described in detail below.

In the pretreatment and posttreatment phases of the study, the researcher conducted interviews with each subject, probing each child's thinking with respect to selected economic concepts (i.e., wants, scarcity, money, monetary value, exchange, profit and how store owners spend their earnings, alternatives/choice, opportunity cost, and cost-benefit analysis). Student's responses were tape recorded and later transcribed to facilitate analysis.

Table 1 lists the interview questions and the directions followed by the interviewer. Questions 1-8 and 10-14 comprised the thirteen-item, understanding-of-economic-concepts measure, and question 9 comprised the one-item, use-of-cost-benefit-analysis measure.

Items for the understanding-of-economic-concepts measure were based on queries used by Burris (1976), Fox (1978), Furth (1980), Schug (1983), and Strauss (1952). With respect to items 1-6, 8, and 10-14, subjects received one point for each correct, misconception-free response and zero points for each incorrect, misconception-driven response (or no response). Item 7 was worth from 0 to 3 points, depending on the number of correct responses given out of the three possible correct responses. Across all items, use of traditional economic concept labels was not required for a response to be considered correct. Two judges, the

investigator and a classroom teacher trained by the investigator, scored each student response independently and blindly. The points awarded for each test item reflected the average of the two judges' scores. Decision consistency between the two judges' scores was 95%.

A decision consistency approach was also used to establish the test-retest reliability of the understanding-of-economic-concepts measure. After receiving their respective treatments, a random half of the subjects participating in this study were tested and retested (after an appropriate time delay) using the understanding-of-economic-concepts measure. With the cut-off score for mastery set at 80% correct, consistent mastery/non-mastery decisions were made 100% of the time; thus, the investigator found the test to have high test-retest reliability.

With respect to the use-of-cost-benefit-analysis measure (i.e. item 9), an economic dilemma from Schug (1983) was employed in order to reveal students' proclivity to use the cost-benefit analysis way of thinking in their day-to-day decision making. Students' responses to this real-life dilemma (i.e. a decision-making situation in which each student made and implemented his/her decision) were evaluated by the same two judges described above in terms of a three-level hierarchy of economic reasoning. The judges scored subjects' responses independently and blindly. A response to the dilemma was worth between zero and three points, and the judges scored each response at the highest level of economic reasoning exhibited. The mean of the two judges' scores served as the indicator of a student's level of economic reasoning. Decision consistency for the two judges was 100%; thus, interjudge reliability was very high.

The point allocation criteria for the students' responses are given below, along with sample responses to the real-life "allowance" dilemma--deciding what store item to buy with one's allowance.

0 = No recognition or use of economic reasoning. (E.g., "I'll buy the pencil. I like pencils.")

1 = Recognition of the existence of scarce resources and identification of scarcity as a relevant decision-making issue. (E.g., "I'll buy the pencil. It costs five cents, and I only have five cents.")

2 = Ability to identify specific alternative uses for scarce resources. (E.g., "I could buy the pencil, or the eraser, or the pad of paper. There are many nice things from which to choose.")

3 = Ability to identify those alternative uses that are realistically within one's consideration set and prioritize them in terms of anticipated benefits. (E.g., "I could buy the pencil, which I like. It is a pretty color and has pictures on it. I also like the eraser because I could erase big mistakes with it. But I think I would choose the pad of paper. It is good for writing notes, and I can use the pencil I already have.")

The economic reasoning scale described above was developed by Kourilsky and Murray (1981). The scale distinguishes between three levels of explicitness in the application of cost-benefit analysis

to personal decision making and has been used in several previous studies (i.e. Kourilsky, 1985; Kourilsky and Graff, 1986; Kourilsky and Kehret-Ward, 1983; Kourilsky and O'Neill, 1985; Laney, 1988; and Laney, 1990).

During the treatment phase and with the researcher's guidance, the subjects in each of the two treatment groups created a market economy within their respective classrooms. Development of these classroom economies was accomplished using a three step process.

First, play money in the form of one and five dollar bills was infused into the economy by paying students on a daily basis for attending school and for cleaning the classroom at the end of the school day. These payments were discontinued after one week.

Second, in order to set up their own stores, students were allowed to purchase a limited number of items (five of a kind for five dollars) from a "factory warehouse" located in the classroom and operated by the investigator. Products and/or raw materials for sale at the factory warehouse included pencils, markers, erasers, pads of paper, toys, children's costume jewelry, and miniature play groceries.

Third, the subjects in both treatment groups engaged in dramatic play activities within their classroom marketplaces. In all, students experienced twelve "market days"--two, twenty-minute market days a week across a six week period. During each market day, students were free to buy, sell, and/or produce goods and services. To prevent students from using the factory warehouse as just another store, the factory warehouse was open every other market day, and students were limited to one purchase (five of a kind for five dollars) a day from the factory warehouse.

Post market day learning activities differed for the two treatment conditions. For both groups, these activities were limited to twenty minutes. Activity descriptions for the experience-debriefing (experience-based learning) group and the experience-dictation (experiential learning) group are provided in the next two paragraphs.

Students in the experience-debriefing (experience-based learning) group received instructional intervention in the form of post market day debriefings led by the researcher. Through role-playing and guided discussion, these debriefings addressed mistakes in play and misconceptions about economic concepts identified during the pretreatment interviews. Topics for the twelve debriefing sessions were as follows: (1) money and exchange, (2) monetary value, (3) review, (4) change, (5) wants and scarcity, (6) review, (7) choice/alternatives, (8) opportunity cost, (9) review, (10) cost-benefit analysis, (11) profit (and how store owners spend their earnings), and (12) review.

Each debriefing session followed a four-step sequence suggested by Kourilsky (1983). First, the students verbally described and role played an instructor-selected economic event from their classroom marketplace. Second, the students, with the instructor's help, identified the central issue, problem, or question associated with the event. Third, the instructor provided the students with new information about the economic concept(s)

relevant to resolving the issue, solving the problem, or answering the question. Fourth, the instructor aided the students in relating the new information to their past experiences and in applying the new information to the current issue, problem, or question.

Students in the experience-dictation (experiential learning) group did not participate in any post market day debriefings. Instead, at the close of each market day, students independently dictated language experience stories about their on-going activities in the classroom marketplace. During each dictation session, students were free to dictate stories about a market-day-related topic of their own choosing or to dictate stories about the "topic of the day" (e.g., money, customers, store owners, stores, decisions, what they liked/disliked about their classroom marketplace). Each student's language experience story was recorded in writing by one of three adults--the regular classroom teacher, a student teacher, or the investigator. When a student was not dictating, s/he was busy drawing a picture to illustrate his/her story.

A possible rival hypothesis to this study as described above is that any learning gains made by the experience-debriefing (experience-based learning) group would be attributable to the instructional debriefing alone rather than the market day experience plus the instructional debriefing. In order to test this rival hypothesis, a debriefing-only control group was added to this study during the following school year. This group was drawn from the same elementary school as the other two groups and consisted of seventeen first graders from one randomly-formed classroom. There were eleven boys and six girls. Thirteen were Caucasian; two were African-American; and two were Hispanic. These students were given the equivalent of the twelve debriefing sessions described previously, but they did not participate in any classroom market days.

Because the experimenter served as instructor, interviewer, and one of two judges in this study, experimenter bias represents a potential threat to external validity. Several steps were taken to minimize this threat. First, the transcribed pretest and posttest responses of each subject were scored by two judges--the investigator and a classroom teacher trained by the investigator. The second judge was unaware of the outcome expectations of the investigator and thus served as an unbiased evaluator. As noted previously, interjudge reliability was quite high on both instruments used in this study. Second, a time delay of several months occurred between the transcribing of the interview responses and the scoring of those responses; consequently, the investigator had time to forget which subjects gave which responses. Third, a subject's name and classroom membership was recorded on the back of the transcriptions to insure blind evaluation by both judges.

Results

Table 2 gives the percentage of correct responses (or response types) on each pretest/posttest question achieved by students in

the experience-dictation (experiential learning) and experience-debriefing (experience-based learning) groups. With respect to the percentage of correct responses at pretest, the two treatment groups were fairly comparable on each question. By posttest, the experience-debriefing (experience-based learning) group was outperforming the experience-dictation (experiential learning) group on every question.

Analysis of students' incorrect pretest responses revealed that the economic misconceptions evident among transitional first grade subjects participating in this study matched those found in earlier studies of young children's economic reasoning (i.e. Armento, 1982; Burriss, 1976; Fox, 1978; Furth, 1980; Kourilsky, 1987; Schug, 1981, 1983; Schug and Birkey, 1985; and Strauss, 1952). At posttest, the number of students giving incorrect responses (and thus the number of students with misconceptions about economic concepts) dropped dramatically in the experience-debriefing (experience-based learning) group. In contrast, the number of students giving misconception-driven, incorrect responses in the experience-dictation (experiential learning) group changed little from pretest to posttest. In a few instances (i.e. questions 1, 2, 4 and 10), students in the experience-dictation (experiential learning) group actually lost ground.

Table 3 provides the pretest-posttest score means and standard deviations for the experience-dictation (experiential learning) and experience-debriefing (experience-based learning) groups on the understanding-of-economic-concepts measure. Pretest means ranged from 4.8 for the experience-debriefing (experience-based learning) group to 5.4 for the experience-dictation (experiential learning) group, while posttest means ranged from 5.7 for the experience-dictation (experiential learning) group to 13.7 for the experience-debriefing (experience-based learning) group. A one-tailed t test for independent samples showed no statistically significant difference between group means at pretest (t observed = $-.77$, t critical = 1.7 , $df = 29$, $p < .05$), indicating that the two groups were comparable prior to instruction. A second one-tailed t test for independent samples at posttest indicated that the mean of the experience-debriefing (experience-based learning) group was significantly greater than the mean of the experience-dictation (experiential learning) group (t observed = 13.72 , t critical = 3.66 , $df = 29$, $p < .0005$).

Table 4 shows the percentage of students in the experience-dictation (experiential learning) and experience-debriefing (experience-based learning) groups performing at mastery level (80-100% correct) on the understanding-of-economic-concepts measure. At pretest, no student in either group was performing at mastery level. By posttest, 94% of the students in the experience-debriefing (experience-based learning) group had reached mastery level as compared to 0% in the experience-dictation (experiential learning) group.

Means and standard deviations of the experience-dictation (experiential learning) and experience-debriefing (experience-based learning) groups on the use-of-cost-benefit-analysis measure are

contained in Table 5. Pretest means ranged from .06 for the experience-debriefing (experience-based learning) group to .13 for the experience-dictation (experiential learning) group. At posttest, means ranged from .33 for the experience-dictation (experiential learning) group to .75 for the experience-debriefing (experience-based learning) group. Posttest scores ranged from 0 to 1 in the experience-dictation (experiential learning) group and from 0 to 3 in the experience-debriefing (experience-based learning) group. There was no significant difference between group means at pretest, as indicated by a one-tailed t test for independent samples (t observed = $-.65$, t critical = 1.7 , $df = 29$, $p < .05$); thus, the two groups were comparable prior to instruction. Results at posttest were in the expected direction but did not reach statistical significance. A one-tailed t test for independent samples showed that the mean of the experience-debriefing (experience-based) learning group was not significantly greater than the mean of the experience-dictation (experiential learning) group (t observed = 1.32 , t critical = 1.7 , $df = 29$, $p < .05$).

Additional data was collected and analyzed in order to test the rival hypothesis that the learning gains made by the experience-debriefing (experience-based learning) group are attributable to the debriefing alone, rather than the experience plus the debriefing. Table 6 contains the pretest-posttest means and standard deviations for the debriefing-only control group on the understanding-of-economic-concepts and the use-of-cost-benefit-analysis measures, while Tables 7 and 8 summarize the results of two one-way analyses of variance used to compare the pretest means of the experience-dictation (experiential learning), experience-debriefing (experience-based learning) and debriefing-only groups on the understanding-of-economic-concepts and use-of-cost-benefit-analysis measures respectively. The two one-way ANOVAs indicate that the three groups were comparable at pretest in terms of their understanding of economic concepts and use of cost-benefit analysis.

On both the understanding-of-economic-concepts and the use-of-cost-benefit-analysis posttests, the mean score of the debriefing-only group fell above the mean score of the experience-dictation (experiential learning) group and below the mean score of the experience-debriefing (experience-based learning) group. Only 6% of the students in the debriefing-only group reached mastery level (80-100% correct) on the understanding-of-economic-concepts posttest. In conjunction with each posttest measure, two planned (a priori) comparisons were used to compare (1) the combined means of the experience-debriefing (experience-based learning) and debriefing-only groups versus the mean of the experience-dictation (experiential learning) group and (2) the mean of the experience-debriefing (experience-based learning) group versus the mean of the debriefing-only group.

With respect to the understanding-of-economic-concepts posttest, both planned comparisons revealed statistically significant differences between the means and combinations of means

tested. The first planned comparison showed that the average of the means of the experience-debriefing (experience-based learning) and debriefing-only groups was greater than the mean of the experience-dictation (experiential learning) group (t observed = 8.83, t critical = 3.55, $df = 45$, $p < .0005$). The second planned comparison indicated that the mean of the experience-debriefing (experience-based learning) group was greater than the mean of the debriefing-only group (t observed = 8.81, t critical = 3.55, $df = 45$, $p < .0005$).

With respect to the use-of-cost-benefit-analysis posttest, the two planned comparisons failed to reveal any statistically significant differences. The average of the means of the experience-debriefing (experience-based learning) and debriefing-only groups was not greater than the mean of the experience-dictation (experiential learning) group (t observed = 1.35, t critical = 1.68, $df = 45$, $p < .05$). Similarly, the mean of the experience-debriefing (experience-based learning) group was not greater than the mean of the debriefing-only group (t observed = .12, t critical = 1.68, $df = 45$, $p < .05$).

Discussion

Schug (1981) asked whether economic instruction could foster the development of economic reasoning ability. The results cited above suggest that many of the misconceptions that young children have about economic concepts can be overcome through experience-based economics instruction featuring (a) real-life experiences with economic concepts and (b) instructor-led debriefing sessions that focus students' attention on the economic concepts hidden within these experiences. Experience-based learning seems to help young children reject misconceptions indicative of a lower level of economic reasoning and embrace accurate conceptions indicative of a higher level of economic reasoning. As in Ajello et al. (1987) and Berti et al. (1986), giving primary grade students correct information about economic concepts appears to cause them to relinquish more primitive conceptions and to adopt more sophisticated conceptions.

This study provides support for Kourilsky's (1983) assertion regarding the superiority of experience-based learning over experiential learning. It is not sufficient for young children to simply participate in economic experiences. In order to make substantive gains in their understanding of economic concepts, young children must also have their attention focussed on the economic concepts that can be distilled from those experiences. Debriefing sessions featuring instructor-led, inquiry-oriented discussions and role playing provide the needed focus. As evinced by the experience-dictation group's gaining little ground (and even losing ground) from pretest to posttest on their understanding of economic concepts, experiential learning appears to focus students' attention on surface-level social interactions and the physical characteristics of objects or processes rather than the economic concepts hidden below the surface. When students'

attention is directed to irrelevant ideas, misconceptions are likely to be reinforced rather than replaced.

According to Armento (1987), learning theory recognizes attention as an important factor affecting knowledge acquisition. Some techniques that can be used to focus students' attention include pointing out the purpose and most important ideas in a lesson, reviewing main ideas, and having students state ideas in their own words. In addition, helping students make connections between new ideas and what they already know is a way of directing their attention. All of the aforementioned techniques were used with the experience-debriefing (experience-based learning) group in this study.

Vygotsky (1978) points out that language development tends to lag behind conceptual development. Perhaps another explanation for the superiority of the experience-based approach is that it simultaneously enhances both conceptual development and language development. Through instructor-led debriefings employing role playing and class discussion, children learn to accurately describe economic events and to attach labels to experiences. This language-related learning, in turn, may deepen children's understanding and thinking about economic concepts. Such thinking is in line with that of Berti et al. (1986)--the notion that children make progress toward concept mastery by talking about economic concepts they have not yet mastered.

One wonders what would have happened in this study if market day experiences, instructor-led debriefings, and language experience story dictation had been combined into a single treatment condition. The addition of language experience story dictation to the experience-debriefing (experience-based learning) treatment condition would have provided students with a further means of (a) growing in the area of language development and (b) reinforcing their knowledge of economic events and concept labels introduced during debriefing sessions.

Experience-based learning does not appear to have an advantage over experiential learning in promoting young children's proclivity to use cost-benefit analysis in their personal decision making. Mean posttest scores on the use-of-cost-benefit-analysis measure (i.e. interview item 9, the real-life "allowance" dilemma) were low for both treatment groups. Laney's (1990) explanation that young children may not be developmentally ready to profit from instruction on the cost-benefit analysis way of thinking seems unsatisfactory. Interview items 10-12 of the understanding-of-economic-concepts measure consisted of the same real-life "allowance" dilemma used for the use-of-cost-benefit-analysis measure. The only difference was that the dilemma was broken down into three parts, with each part cuing students to use the cost-benefit analysis way of thinking. As indicated by the high percentage of correct responses at posttest on these three items, children in the experience-debriefing (experience-based learning) group demonstrated an understanding of the subconcepts inherent in the cost-benefit analysis process (i.e., scarcity, alternatives/choice, and opportunity cost). In other words, when

cued by the investigator to do so, the students successfully used cost-benefit analysis. Why, then, were posttest scores so low on the real-life "allowance" dilemma (interview item 9) that constituted the use-of-cost-benefit analysis measure? Perhaps students were using cost-benefit analysis but were not verbalizing the steps of the process in an effective manner because they were not cued to do so. Or perhaps these students had the capacity but not the proclivity to use cost-benefit analysis in their personal decision making. For young children, development of this proclivity may require instruction on economic decision making over an extended period of time.

The performance of the debriefing-only control group provides some evidence to discount the rival hypothesis that the learning gains made by the experience-debriefing (experience-based learning) group are attributable to the instructional debriefing alone, rather than the market day experience plus the instructional debriefing. On the understanding-of-economic-concepts posttest, the mean of the debriefing-only group fell above the mean of the experience-dictation (experiential learning) group, but was well below the mean of the experience-debriefing (experience-based learning) group. Just as experience alone is not the best teacher, neither is economics instruction alone sufficient to produce substantive learning, at least with respect to young children's understanding of economic concepts. As in Laney (1989), economic concepts appear to be more meaningful and memorable when real-life experiences with these concepts are provided.

The implications of this study extend beyond early economic education to concept teaching and early childhood education in general. It seems likely that the benefits of experience-based approaches can be extended to other disciplines and a variety of concept types. Katz and Chard (1990) call for a developmentally appropriate early childhood curriculum focussing on intellectual goals. They stress the importance of engaging children's minds so that children better understand their experiences and environment. Experience-based approaches, by connecting experiences with inquiry-oriented debriefing sessions, have the potential to engage children's intellects to a greater extent than either spontaneous play or systematic academic instruction (i.e. teaching a sequence of interrelated subskills to individual children). As noted by Katz and Chard, what is needed is a balanced usage of current early childhood practices.

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TABLE 1

PRETEST/POSTTEST QUESTIONS AND DIRECTIONS TO INTERVIEWER

Pretest/Posttest Questions	Directions to Interviewer
1. Do people have everything they want?	1.
2. Why do/don't people have everything they want?	2.
3. Which dollar would you prefer/like to have? Why would you prefer/like to have that dollar?	3. Present the student with two one-dollar bills--one genuine and one play.
4. Why does this dollar have value/worth?	4. Point to the genuine dollar bill.
5. Why does this dollar have no real value/worth?	5. Point to the play dollar bill.
6. Why do customers give money to store owners?	6. Show a picture of a person purchasing something in a store. Point to the customer (standing behind a shopping cart). Point to the store owner (standing behind a cash register).
7. What happens next with the money? What does the store owner do with the money s/he gets from the customer? What does s/he use the money for?	7. Show the same picture as in question #6. Point to the store owner. Point to the customer.
8. Why do store owners give change/money back to customers?	8. Show the same picture as in question #6. Point to the storeowner. Point to the customer. After the student answers the question, remove the picture.
9. You are at a store and have 5¢ in your pocket. Pick out three things you would like to have from the store. Remember you have 5¢ in your pocket. The () costs 5¢; the () costs 5¢; and the () costs 5¢. What will	9. Give the student an "allowance" of 5¢. Show the student a box labeled "store" and containing five items, each priced at 5¢. After the student indicates his/her three wants, remove all other items from the student's

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you do with your money? Talk out loud as you think about what to do. Tell me everything you are thinking about to help you decide.

10. Let's start over and pretend you have not made a decision about what to do with your money. You have 5¢. The () costs 5¢, the () costs 5¢, and the () costs 5¢. What is your problem?
11. What are your alternatives/possible choices of what to do with your money?
12. When you selected the () over the (), was there anything that you were giving up? Can you explain how?
13. I'd like to tell you a short story about a girl named Susan. Susan is 15 years old. Last Friday night, some of Susan's friends asked her if she wanted to go to a movie. But, Susan's father said that if she stayed home and babysat on Friday, he'd pay her \$3. Does Susan give up anything if she chooses to babysit on Friday night? Can you explain how?
14. The leaders of our country, like the President, sometimes must decide how our country's money should be spent. Imagine that the President can use \$5 million of our country's money to make our schools better, or he can use the \$5 million to improve our highways by widening and building new roads. In this case, does our country give up anything if the President uses the money to make the schools better? How?

view. Point to each item/want as you talk about it.

10. Give the student an "allowance" of 5¢. S/he is shown the same three items/wants from question #9. Point to each item/want as you talk about it.
11. After the student answers this question, have him/her (a) list reasons why s/he would like to have each item, (b) select one item to keep, (c) pay for the item, and (d) tell why s/he selected that item over the others.
12. Point to each item/want as you talk about it. Remove all items after the student answers the question.
- 13.
- 14.

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TABLE 2
 PERCENTAGE OF CORRECT RESPONSES (OR RESPONSE TYPES) FOR
 EACH PRETEST/POSTTEST QUESTION BY TREATMENT GROUP

Questions	Experience-Dictation Group		Experience-Debriefing Group	
	Pretest	Posttest	Pretest	Posttest
1. Do people have everything they want?	87%	80%	75%	100%
2. Why do/don't people have everything they want?	60%	53%	38%	100%
3. Which dollar would you prefer/like to have? Why would you prefer/like to have that dollar?	7%	7%	13%	88%
4. Why does this dollar have value/worth?	27%	13%	25%	100%
5. Why does this dollar have no real value/worth?	13%	13%	25%	100%
6. Why do customers give money to store owners?	80%	93%	72%	100%
7. What happens next with the money? What does the store owner do with the money s/he gets from the customer? What does s/he use the money for?	to live on 33% to run his/her business 7% for change 60%	to live on 47% to run his/her business 40% for change 27%	to live on 50% to run his/her business 13% for change 13%	to live on 100% to run his/her business 81% for change 75%
8. Why do store owners' give change/money back to customers?	13%	20%	0%	69%

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9. Real-life "allowance" dilemma: What will you do with your 5¢?	level 0 87%	level 0 67%	level 0 94%	level 0 63%
	level 1 13%	level 1 33%	level 1 6%	level 1 13%
	level 2 0%	level 2 0%	level 2 0%	level 2 13%
	level 3 0%	level 3 0%	level 3 0%	level 3 13%
10. What is your problem? *	60%	53%	38%	100%
11. What are your alternatives/possible choices of what to do with your money? *	33%	33%	25%	100%
12. When you selected the () over the (), was there anything that you were giving up? Can you explain how? *	0%	7%	6%	75%
13. Opportunity cost story: "Susan's Dilemma."	33%	47%	56%	100%
14. Opportunity cost story: "Presidential Dilemma."	27%	33%	31%	81%

* Questions 10-12 were posed in conjunction with the same real-life "allowance" dilemma used in question 9.

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TABLE 3

SCORE MEANS (M) AND STANDARD DEVIATIONS (SD) ON THE UNDERSTANDING-OF-ECONOMIC-CONCEPTS MEASURE

Treatment Group	Pretest		Posttest	
	M	SD	M	SD
Experience-Dictation Group (n = 15)	5.4	2.2	5.7	1.9
Experience-Debriefing Group (n = 16)	4.8	2.2	13.7	1.3

TABLE 4

PERCENTAGE OF STUDENTS IN EACH TREATMENT GROUP PERFORMING AT MASTERY LEVEL (80-100% CORRECT) ON THE UNDERSTANDING-OF-ECONOMIC-CONCEPTS MEASURE

Treatment Group	Pretest	Posttest
Experience-Dictation Group (n = 15)	0%	0%
Experience-Debriefing Group (n = 16)	0%	94%

TABLE 5

SCORE MEANS (M) AND STANDARD DEVIATIONS (SD) ON THE USE-OF-COST-BENEFIT-ANALYSIS MEASURE

Treatment Group	Pretest		Posttest	
	M	SD	M	SD
Experience-Dictation Group (n = 15)	.13	.35	.33	.49
Experience-Debriefing Group (n = 16)	.06	.25	.75	1.13

TABLE 6

PRETEST-POSTTEST MEANS (M) AND STANDARD DEVIATIONS (SD)
FOR THE DEBRIEFING-ONLY
CONTROL GROUP*

Instrument	Pretest		Posttest	
	M	SD	M	SD
Understanding-of-Economic-Concepts Measure	4.71	1.05	7.94	2.25
Use-of-Cost-Benefit-Analysis Measure	.24	.66	.71	1.05

*n = 17

TABLE 7

ANALYSIS OF VARIANCE SUMMARY TABLE FOR THE
UNDERSTANDING-OF-ECONOMIC-CONCEPTS PRETEST

Source of Variation	Sum of squares		Mean square	
	SS	df	MS	F
Between groups	4.51	2	2.25	.62*
Within groups	163.11	45	3.62	
Total	167.62	47		

*p < .05; F critical: 3.21

TABLE 8

ANALYSIS OF VARIANCE SUMMARY TABLE FOR THE
USE-OF-COST-BENEFIT-ANALYSIS PRETEST

Source of Variation	Sum of squares		Mean square	
	SS	df	MS	F
Between groups	.25	2	.12	.58*
Within groups	9.73	45	.21	
Total	9.98	47		

*p < .05; F critical: 3.21