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Teaching economics with a bag of chocolate: A classroom experiment for elementary school students[☆]



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ABSTRACT

This paper describes a classroom experiment suitable for elementary school students in which participants are actively engaged in making trading decisions. Students are provided an endowment of gum and are asked to make trading decisions to acquire chocolate. As the opportunity cost of acquiring a piece of chocolate rises, fewer students are willing to make trades. This interactive classroom exercise illustrates three fundamental economic concepts: the law of demand, opportunity costs, and gains from trade. Assessment test results reveal that two days after this classroom exercise, fifth grade students register significant improvements in their understanding of three fundamental economic concepts.

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1. Introduction

This paper offers an active learning/classroom exercise suitable for elementary school students that illustrates three fundamental economic concepts: the law of demand, opportunity cost, and gains from trade. The activity requires just two props: a bag of chocolate and a bag of gum. At the conclusion of the classroom exercise, the data collected during the trading sessions are presented to students

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Table 1

Economics assessment results: how well do elementary students learn economics from classroom activity?

Assessment question	5th graders: Class 1		5th graders: Class 2		All 5th graders	
	Before	After	Before	After	Before	After
Q1. Define the “Law of Demand”	79.2%	79.2%	81.8%	92.0%	80.4%	85.7%
Q2. Identify demand curve on graph	45.8%	66.7%	18.2%	80%**	32.6%	73.5%**
Q3. Gains from trade	33.3%	70.83%*	54.5%	76.0%	43.5%	73.5%**
Q4. Opportunity cost of chocolate	58.3%	87.5%*	77.3%	76.0%	67.4%	81.6%
Q5. Opportunity cost of gum (fraction)	45.8%	62.5%	18.2%	60%**	32.6%	61.2%**
Observations	24	24	22	25	46	49

Notes: A two-sample Wilcoxon rank-sum test rejects the hypothesis that the before and after test scores have equivalent distributions at the 1% (***) and 5% (*) level. Assessment questions (see Appendix) were given to a public elementary school in Greenville, NC, USA, two days after conducting the classroom activity in Spring 2011.

which yields a discussion of graphs, specifically the derivation of a downward sloping demand curve. The objective of this classroom exercise is to have elementary school students discover the demand curve themselves, and hence provide them with some intuition as to why economists draw demand curves with negative slopes. This activity also may be used to initiate a discussion of the principles of individual decision making – (1) people face trade-offs; (2) the cost of something is what you give up to get it; and (3) trade is good. The assessment results reveal that two days after this classroom exercise, fifth grade students exhibit significant improvements in their understanding of some fundamental economic concepts.

Children commonly have some misconceptions about economics (Schug, 1994). Yet, children are also fully capable of learning and understanding economic concepts (Kourilsky, 1987; Schug, 1994; Sosin et al., 1997; Laney and Schug, 1998).¹ Schug (1983) shows that elementary school grades are capable of mastering basic economic concepts including opportunity cost. Laney (1988) examines learning and retention rates of economic concepts among first, third, and sixth grade students and finds that initially all students appeared to grasp the scarcity and opportunity costs concepts, however, their mastery of their retention of these concepts eroded (especially for the younger grades) in post-test examinations. Kourilsky (1977, 1983) advocates using experienced-based approaches to economic instruction for elementary school students through Kourilsky’s Kinder-Economy (grades K–2) and Mini-society (grades 3–6). Further work by Kourilsky (1987) examines the most effective teaching techniques for elementary school students learning and finds that regardless of how well the teacher explains a concept, students’ learning is enhanced only if given numerous opportunities to practice the behavior that meet the teachers’ instructional goals. Laney (1989) finds economic concepts are more meaningful and have greater retention when students have real-life experiences with economic concepts (Table 1).

Given the above research overwhelmingly shows the importance of elementary school students having real-life experiences with economic concepts in order to master and retain these concepts, the purpose of this paper is to propose an easy to implement and entertaining classroom activity that allows students real-life experience with three fundamental economic concepts – the law of demand, opportunity cost, and gains from trade. At the conclusion of the classroom activity, a debriefing session is held with the participants to reiterate the economic concepts that they just experienced. Debriefing has been found to lead to higher learning retention rates for elementary school students (Laney, 1993). While these activities are used on elementary school students, they could also be employed in introductory economics classes.

Previous classroom experiments by Weidenaar (1972) and a derivation of Weidenaar’s exercise presented by Brock (1992) both develop a demand curve by employing oral auctions of a good (apples and Cokes) to derive the quantity demanded at various prices in their undergraduate classes. A distinction between these previous papers and this study is that only students who bring money to class can participate in the oral auctions, whereas in this classroom experiment students are endowed

¹ Miller and VanFossen (2008) provide a comprehensive survey of recent research on teaching and learning of pre-college economics.

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