



Resources like these are incorporated into high school curricula and teacher workshops throughout the educational system.

# Learning Curves

## The economics behind high school economic education

BY RENEE COURTOIS

A group of analysts studies the S&P 500 as it plunges 100 points. Stocks have been tanking for days, so tensions among many are mounting. Others are guardedly optimistic that a bottom to the decline may be near. By the end of the trading period, the exhausted parties retreat to their desks to recap the trading day and discuss strategy before next session's opening bell.

These analysts are not stockbrokers; they are 12th-grade high school students gaining their first introduction to investing and personal finance through an online stock market simulation. The class session is part of an effort to teach students economic concepts by immersing them in real-

world scenarios instead of traditional lectures and graphs. How do students like it?

"Due to the success of the program, the class size has expanded from 85 students last year to 180 this year," says Tim Hudenburg, social studies teacher at Oakton High School in Vienna, Va.

Stock market simulations are just one way in which economics teachers try to blend economic theory with real-world application, and this is a scene you might find in any number of classrooms across the country. About 50 percent of high school graduates nationally take an economics course in high school, up from 24 percent of students in the

Courtesy of the Powell Center for Economic Literacy, Federal Reserve System, and Virginia Council on Economic Education.

early 1980s. This is due in part to the push in recent years toward adding economics courses as a high school graduation requirement (see chart on page 31).

The primary motivation for educating individuals about economics and personal finance is fairly straightforward: Economic and financial decisions pervade our everyday lives. Yet, the concepts involved are not always intuitive and are often downright complicated.

Adults face a variety of significant financial choices: what current and future job opportunities to pursue, where to live, whether (and when) to purchase a home, what financial assets to invest in, and how much to save for retirement or pass down to their children. Despite the fact that people have an incentive to educate themselves about such financial decisions, occasional missteps do occur. These range from behavior that is simply hard to reconcile with standard economic theory — such as underparticipation in employee-matching 401(k) plans or bypassing advantageous mortgage refinancing opportunities — to more serious financial mistakes that result in loan delinquency or bankruptcy. Highly targeted financial education initiatives have been shown to help adults make better financial decisions.

Clearly, high school students don't make financial decisions of the same magnitude as adults. They typically are not in the market to purchase homes and most don't even have credit cards. However, many do face choices about jobs, how to create and follow a budget, and how to save for college or some other goal. They will most certainly face more complicated financial decisions as college students and adults.

High schoolers also are a captive audience. Economist William Walstad of the University of Nebraska-Lincoln estimated that high school is the last opportunity for 75 percent of people to ever formally study economics — either because they don't go to college or because only 40 percent elect to take an economics course if they do go to college. Together, these factors provide considerable rationale for targeting educational initiatives in economics and personal finance toward high schoolers.

Experience-based teaching methods like stock market simulations have proven particularly effective at the high school level. Still, quality education in economics and personal finance faces tough challenges, including inconsistent requirements for graduation across the country, trade-offs between teaching economics versus personal finance and how to effectively make them complements, and the lack of research studies to determine which types of programs work best at this level of education.

### The Lay of the Land

Even in states where schools are required to offer courses on economics or personal finance, students may not be required to take them. Similarly, despite the large number of states that have established content standards for economics and personal finance, the number of states requiring students to take the courses for graduation is dramatically lower. As of the latest count in 2007 by the Council for

Economic Education (CEE), 17 states require students to take economics before graduation, while only seven states require personal finance.

Within the Richmond Fed's district, only the Carolinas require students to take an economics course prior to graduation, and no Fifth District state requires students to take a course devoted to personal finance (see chart below). This is not for lack of trying. In Virginia, for example, the state CEE along with the local chapter of the Jump\$Start Coalition for Personal Financial Literacy recently encouraged the Virginia Board of Education to insert into state graduation requirements a joint course on economics and personal finance. The provision was passed in February 2009, and it will go into effect starting with students entering 9th grade in 2010.

One of the main reasons that all states do not adopt requirements in economics and personal finance is the trade-offs entailed. For every economic concept a teacher covers, a topic in another discipline is not. According to a survey of teachers by Networks Financial Institute at Indiana State University, the lack of time, state curricula requirements, and demand are the three greatest challenges to teaching financial literacy topics, according to K-12 teachers. Teachers also say that they are not sure where to even fit financial literacy into curricula in which it is not already required.

Schools are more likely to offer courses in economics and personal finance if they have faculty available who are trained in these fields. Indeed, another institutional challenge of this type of education has to do with the qualification of teachers, a major determinant of how well economics and personal financial are taught. A 1999 paper by Walstad and Sam Allgood, another University of Nebraska-Lincoln economist, argues that teachers need at least six college-level courses before being qualified to teach economics effectively — the paper claims that most high school economics teachers, in actuality, take one or two economics courses in college. To address this issue, many

	ECONOMICS		PERSONAL FINANCE	
	REQUIRED FOR HIGH SCHOOL GRADUATION	IMPLEMENTATION OF STATE CONTENT STANDARDS IS REQUIRED *	REQUIRED FOR HIGH SCHOOL GRADUATION	IMPLEMENTATION OF STATE CONTENT STANDARDS IS REQUIRED *
DC		✓		✓
WV		✓		✓
MD		✓		
VA		✓		✓
NC	✓	✓		✓
SC	✓	✓		✓

NOTE: \*Content standards for the subject have been developed within the state, and are required to be implemented (used) by schools. In Maryland, no content standards have been developed for personal finance.

SOURCE: "Survey of the States: Economic, Personal Finance & Entrepreneurship Education in Our Nation's Schools in 2007," Council for Economic Education, 2007

nonprofit organizations with an emphasis on economic and financial education focus their efforts on teaching teachers. Organizations such as the CEE, Jump\$tart, and Federal Reserve banks are primary contributors in this area, offering an extensive supply of curricular materials and teacher workshops. The CEE and Jump\$tart also get involved in influencing content standards in states, as with the recent push in Virginia.

One question raised by the gaps in state requirements and teacher expertise is whether financial literacy is something better left to parents to teach their children. Whether this is true may depend on who you are. Students who score poorly on economic and financial literacy surveys are more

likely to be from households that are either lower in income or educational attainment, or both. Students of those backgrounds also are less likely to go to college and, consequently, are likely to earn less as adults.

These findings seem to imply that students who are the least likely to learn personal finance fundamentals at home are those who need that sort of training most at the high school level. Lacking are studies that investigate the cause of correlations between a student's socioeconomic standing and their economic and financial literacy. Regardless, it is likely true in at least some instances that students cannot learn at home what their parents themselves do not understand.

## How Well Do Economists Understand Economics?

Could you answer this question?

You won a free ticket to see an Eric Clapton concert (which has no resale value). Bob Dylan is performing on the same night and is your next-best alternative activity. Tickets to see Dylan cost \$40. On any given day, you would be willing to pay up to \$50 to see him. Assume there are no other costs of seeing either performer. Based on this information, what is the opportunity cost of seeing Eric Clapton?

- A) \$0
- B) \$10
- C) \$40
- D) \$50

A survey of 199 Ph.D.-level economists made headlines in 2005 when, apparently, nearly 80 percent of them answered incorrectly. Two-thirds of them had an average of about 15 years post-Ph.D. experience, with the rest being Ph.D. candidates, and almost half got their degrees from a top-30 institution. Sixty-one percent of all respondents had taught introductory economics.

Opportunity cost, as economists call it, is what you give up in order to get something else. Put differently, opportunity cost is the value of your next-best alternative. It is one of the most fundamental economics concepts there is, and underlies all economic assumptions about how people make decisions. Understanding your opportunity cost is, in theory, the means by which you decide if a given opportunity is worthwhile.

In the question above, the correct answer is B: The opportunity cost of seeing Eric Clapton is \$10. You value the Dylan concert at \$50 but you would have to pay only \$40 to go, so your net benefit from seeing Dylan would be \$10. However, you forego the option to see Dylan, so you're giving up the equivalent of \$10 if you choose to see Clapton after all.

It turns out that the correct answer was the least popular of the economists surveyed, chosen by just 21.6 percent.

The most popular answer was \$50, which 27.6 percent chose; 25.6 percent chose \$40, and 25.1 percent chose \$0. In other words, economists' performance on this question was similar to the likely performance of kindergartners on the same question: Choosing an answer at random would have yielded a similar result.

Before we start to lament the state of the economics profession, a closer look at the question is in order. Those who thought the opportunity cost was \$50 may have believed that only the benefit received of attending the Dylan concert was relevant, ignoring the cost of purchasing the Dylan ticket. Those who chose \$40 seemed to focus on the word "cost," confusing opportunity cost with the dollar cost of seeing Dylan. Those who chose \$0 may have misread the question, thinking they were being asked to guess the opportunity cost of seeing Dylan (which would be nothing, since the Clapton ticket was free and the question implies you don't place any value on seeing old Slowhand).

These answers are still incorrect, but at least they are justifiable. Many economists who answered the question incorrectly probably either read too much into the question or found the wording to be confusing.

Economic literacy tests like the U.S. Department of Education's National Assessment of Educational Progress seek to separate jargon from basic concepts, attempting to evaluate comprehension of the underlying idea over memorization. Based on the survey of economists, this is a good thing. For the use of economics in the real world, it is less important that students can define the phrase "opportunity cost," and more important that they understand that people make decisions based on their perceptions of the next-best alternative.

By the survey's own admission, this study was casual and extremely narrow. But it highlights a challenge in assessing economic literacy at any level: Even when seemingly straightforward, assessment is extremely difficult — and survey design is key.

— RENEE COURTOIS



## Economics and Personal Finance: Complements or Substitutes?

How is economics different from personal finance? One might think of economics courses as developing the intuition behind how markets and economies work, while personal finance provides a more applied understanding of some of the financial decisions currently face and will continue to face in increasing complexity in adulthood.

In practice, high school personal finance typically encompasses the fundamentals of saving and investing, budgeting, and debt — concepts that might help transition students from being under their parents' financial wing to managing their own finances. Its focus tends to be on the practical application of skills within real-world situations that students are likely to face.

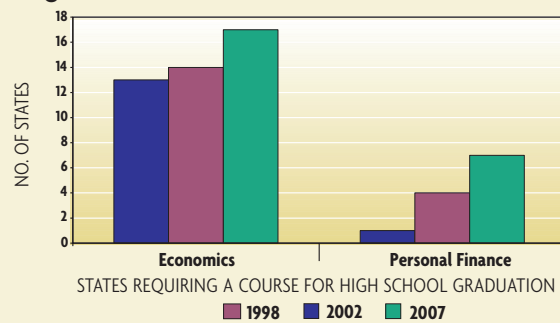
High school economics, on the other hand, can take one of two approaches. Some economics courses focus on economic theory: fundamental topics such as scarcity, the determination of prices through supply and demand, and the concept of comparative advantage. Other economics courses are more applied and often linked to civics, covering the roles of government, taxation, and comparative economic systems in societies. Rarely do high school economics courses cover the more nuanced fields of economics such as game theory and behavioral economics, but even the basic economic principles taught at the high school level can provide the foundation for students to utilize economics as a framework for understanding both the financial and nonfinancial world.

Both economics and personal finance reinforce an understanding of how the economy and world operate, so naturally there is considerable crossover between the two. However, there is no consensus among states, or even school districts within a state, on whether economics and personal finance concepts should be taught together or in completely separate courses.

This is a shame, according to some who view the two as complements. Kurt Waters, a high school social studies specialist for Virginia's Fairfax County Public Schools, says that teachers who segregate personal finance from economics miss a unique opportunity for students to recognize their own patterns of behavior in microeconomic theories about how people and firms make choices. For them, the juxtaposition of economic theory and the application offered by personal finance can firmly ground these concepts as well as create an appetite to learn more. "For kids who study theory first, it can go in one ear and out the other. Bright kids will soak up anything, but most kids need relevance to be able to understand theory. They need to see it played out in reality, and that makes it exciting to them," Waters says. "In my experience, it is tremendously successful to hook them with personal finance, and then weave economic theory throughout."

Tim Schilling, associate director of the Richmond-based Powell Center for Economic Literacy, believes that comprehension of both economics and personal finance is critical

## Push Toward Personal Finance Lags Economic Education



SOURCE: "Survey of the States: Economic, Personal Finance & Entrepreneurship Education in Our Nation's Schools in 2007," Council for Economic Education, 2007

because an understanding of how personal finance decisions play out in the macroeconomy can help students understand how aggregate outcomes can affect them personally. "I think understanding economic principles is a vital component to being financially literate. Understanding how economics makes the larger picture work is important in making personal financial choices. Many people don't understand the concept of debt as a tool in the overall economy, much less the macroeconomic implications of defaulting on loans," Schilling says.

## Assessment Is Key

There are several goals of economic and financial education at the high school level, including better preparation for financial independence in college, better performance in college economics courses, and producing more informed voters. Ultimately, however, better financial decisionmaking is largely touted as the primary goal. Unfortunately, research is notably lacking in whether this is actually achieved.

By one measure, high school seniors' financial literacy has never been worse. The biannual JumpStart Coalition's 2008 Survey of Personal Financial Literacy Among High School Students produced the lowest financial literacy scores of high school seniors since the survey was first conducted in 1997, with high school seniors' average literacy falling to 48.3 percent. The students were tested in classes unrelated to business, economics or personal finance, so we cannot link this performance to the quality of in-class instruction or to the quantity of related classes taken by students. In other words, the survey simply assesses high school seniors' literacy of personal finance issues, not the effectiveness of education geared toward it.

The U.S. Department of Education's first-ever National Assessment of Educational Progress (NAEP) in economics may present a rosier picture, at least at first glance. This 2006 assessment found that 79 percent of high school students possess at least a "basic" understanding of economics. The NAEP survey is carefully designed to assess comprehension of the fundamental concepts in macroeconomics, microeconomics, and international economics — as opposed to the jargon and algebraic properties that can

saturate the field — whether students learned the concepts in school, at home, or elsewhere. While the vast majority of these students (87 percent) had studied economics in some form in high school, their performance on the NAEP cannot be tied to one specific course or method for teaching economics. Researchers will be able to better interpret these results in the next NAEP study on economics in 2012.

The NAEP and Jump\$tart surveys were not designed to be directly comparable, so we cannot draw conclusions on the state of economics education relative to personal finance based on these separate assessments. For example, since the NAEP test focuses on underlying economics concepts instead of definitions, it may be easier for students to reason through even without concrete, or quality, economics training. The Jump\$tart personal finance literacy survey, which can cover investment vehicles, the tax treatment of savings, and stylized facts on investing, may be thought to require more direct instruction and retention of definitions in order for students to perform well. These disparities highlight that survey design is a major determinant of results on tests of economic and financial literacy.

There is an even greater challenge on assessing the efficacy of economic and financial education. Despite the best of performances on economics and financial literacy tests, there is no guarantee that students will go on to apply those concepts later in life. Financial decisionmaking and its outcomes occur far outside the classroom, long after classes have been taken. This means that studies which look at the effectiveness of economic and financial literacy must connect learning experiences in high school with the financial decisions made years later.

Longitudinal studies that follow individuals over time run into a classic problem which high school economics students are warned about: the trap of confusing correlation with causation. It may be that those who study financial topics in high school and go on to make sound financial decisions are simply better at it to begin with. Researchers can attempt to correct for this by accounting for factors such as I.Q. or SAT performance, which have proven to correlate with economic and financial literacy. However, they cannot capture the intrinsic willingness of some individuals to engage in financial markets, adapt from past experiences, and make themselves aware of new opportunities. In those cases, financial education initiatives may not be the primary drivers of behavior.

Schilling agrees that there is something inherent about economics and financial education programs that makes

their assessment difficult. “We sometimes forget that there are motivational factors beyond the financial that affect decisions — time, emotions, self-satisfaction, etc. I’m not sure you can capture that on a standard study.”

### Forward Looking

Some conclusions can be drawn from studies on adult financial literacy about what educators could emphasize at the high school level. First, successful programs for adults are highly targeted and event driven: for example, homeownership counseling for adults about to purchase a home or precrisis counseling programs for those making a major refinancing decision are the most effective. Second, programs for adults tend to focus on their biggest financial risk areas: debt management, mortgage counseling, and retirement planning.

How would this be mimicked at the high school level? From a personal finance perspective, education could be targeted toward the benefits and pitfalls of credit cards, the basics of budgeting, and how students can form realistic expectations for their financial future. It would also be helpful to provide students with an understanding that individuals bear responsibility for their financial health. For example, it is not the job of credit card companies to see to it that individuals manage their debt — people must check and manage their credit reports, and fraud can hit even careful consumers. From an economics standpoint, students need to understand how to apply basic microeconomic reasoning to major decisions: Start with a cost-benefit analysis, add incremental degrees of complexity, and keep aware of unintended consequences. They also need a grasp of how their financial decisions interact with the broader macroeconomy.

We also know that experience-based activities which are fun and involve real-world problem solving, such as popular stock market simulations, may give students the most encouragement to absorb and retain information. Importantly, more assessment is needed on the effectiveness of specific education initiatives at the high school level.

But who says tests of economic understanding aren’t associated with changed behavior? Hudenberg’s stock market simulation exercise may have stumbled onto one surefire method for getting students to absorb the economic and financial information they’re learning. “The overall winner of the stock market game does not need to take the final in June, which has given the students some real incentive to succeed,” the teacher says. **RF**

### READINGS

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