

4

Education

PURPOSE

In this chapter we look at both K–12 and higher education, which should be interesting topics to our students (they’ve been there, done that, and are doing it). We particularly pay attention to issues of financing and equal opportunity in K–12 and in higher education in the U.S. We analyze issues of decreasing state support for public university systems and access to higher education by low-income and minority students. And of course, we analyze economic liberal and conservative approaches to education.

LEARNING OBJECTIVES

The learning objectives for this chapter are:

1. to get students to think about education’s spillover benefits onto society.
2. to examine the effects of education’s spillover benefits in terms of resource allocation and equity.
3. to compare global educational spending and outcomes.
4. to acquaint students with the effects of property tax financing on K–12 education.
5. to discuss the quality of K–12 education and possible policies to improve it.
6. to help the student analyze the effects of subsidies to education such as state appropriations, student loans, and Pell grants.
7. to discuss investment-in-human-capital theory with regard to college education.
8. to show the student the national trend of decreasing government support for public university systems.
9. to assess the access to higher education by low-income and minority students.
10. to delineate the economic conservative and liberal viewpoints on education, including the use of vouchers and affirmative action.
11. To consider some of the changes to public and private education brought about by the administration of Donald Trump.

LECTURE SUGGESTIONS

- Students respond to the investment in human capital model. Begin by asking, “Why are you here?”
- Many of my students are education majors. They are especially aware of some of the government policies regarding K–12 education.
- Anything you can do to make the issues personal to the students gets their attention. Find out about state appropriations to your state’s university system. Trace tuition increases over time. Invite students to discuss their own forms of financial aid. (Low-income students may be reluctant to discuss this.) Even students in private colleges are interested in the state system.
- If state appropriations to your state’s university system are now a smaller percent of the state budget, discuss the change in social values this represents. Also look at the steps the system has taken to adjust to this trend.

- Stress that public K–12 education is viewed as a means of promoting equal opportunity in our society, but look at the problems created by unequal funding through property taxes. If your state (or a neighboring state) has been involved in court cases involving equity in funding, find out the details and discuss them.
- Middle-class students often feel that they are treated unfairly in regard to postsecondary education. “The rich can afford it, and the poor get all the grants.” Remind them of the opportunity cost of education and point out that really poor families often cannot afford to give up full-time earnings while a family member attends school.
- Students will have strong opinions regarding issues of vouchers, affirmative action, and “No Child Left Behind” (they will remember this program). They will often oppose the extensive testing involved in the latter, and they may feel differently about vouchers and affirmative action, depending on whether they feel they are “winners” or “losers” in the system. Because minority students may be reluctant to voice their favor of affirmative action, the instructor should probably discuss the positive institutional and societal impact of it (especially the benefit of the diversity in the university setting).
- Many textbooks state that one spillover of education is lower crime. Point out that this may be true for some crimes, but certainly white collar and corporate crime may be exceptions.

ADDITIONAL DISCUSSION AND ACTION QUESTIONS

Some of the following questions may be useful in generating discussion.

1. The Inner City has a property tax base of \$40,000 per student, while the Suburb has a property tax base of \$200,000 per student. Show:
 - a. how the amount allocated per student will differ if both fund their schools by a 4% tax rate.
 - b. then show how the tax rate of the Inner City would have to increase to 20% for it to provide the same funding per student as the Suburb.
2. Is the expenditure per student a perfect way to measure the quality of education? Is there a threshold amount that needs to be spent per student to ensure quality?
3. Discuss these policies to improve our K–12 schools:
 - a. magnet schools
 - b. vouchers
 - c. tax reform

Which would be preferred by economic conservatives, and which by economic liberals?

4. Draw a supply and demand graph and show the effects of education’s spillover benefits on the allocation of resources. Then discuss what these spillover benefits are and whether they are present at the K–12 level, the college level, or both.
5. Look at these subsidies to education and to the income level of the students who receive each of them:
 - a. Pell grants (do they provide an incentive for middle-income students to seek independent status from their parents?)
 - b. state tax subsidies of public universities (who goes to junior college and who to the flagship)
 - c. guaranteed student loans
6. Look at the decision to attend college in the context of an investment in human capital. What are the direct costs at your school?, the indirect costs? Do the extra earnings students can expect to receive because they are college graduates vary by occupation?
7. Joe is a student at Great Big University. His tuition is \$10,000 a year. He spends \$2,300 per year on books and \$500 per year on university fees. He would be able to earn \$15,000 by working if he were not in school, but he can only work part-time while in school, so his earnings are only \$8,000. What are Joe’s total costs for a year of college? (**$\$10,000 + 2,300 + 500 + 7,000 = \$19,800$**) Why did we not consider Joe’s room and board?

8. Use these data in conjunction with the investment in human capital graph to analyze Janice's decision whether to attend college. If Janice does not go to college her expected earnings are:

<u>Age</u>	<u>Annual Earnings</u>
18–22	\$12,000
23–30	15,000
31–40	18,000
41–50	22,000
50–65	25,000

If Janice does go to college, she will not begin working until she is 23. Her expected earnings are:

<u>Age</u>	<u>Annual Earnings</u>	<u>(increase)</u>	
23–30	\$26,000	$(8 \times \$11,000 = \$88,000)$	
31–40	29,000	$(10 \times \$11,000 = \$110,000)$	
41–50	35,000	$(10 \times \$13,000 = \$130,000)$	
50–65	45,000	$(15 \times \$20,000 = \$300,000)$	Total = \$628,000

- What are Janice's benefits in terms of increased earnings throughout her working life (ages 23–65)? **(\$628,000)**
 - If the direct costs of college are \$80,000, would college be a good investment for Janice? **(indirect cost = $5 \times \$12,000 = \$60,000$, so total cost = \$140,000)**
- Assume an investment of \$100,000 and increased earnings of \$10,000 a year. What is the rate of return?
 - What is the role of affirmative action in higher education? What is the role of "legacy" admissions (students of parents who attended the school)? What is the role of K–12 education and the ability to succeed in higher education?
 - Why is the education of girls and mothers important in the developing countries of the world?
 - Compare the U.S. with global inputs and outputs in education.

SOME ANSWERS AND COMMENTS ON THE TEXT DISCUSSION AND ACTION QUESTIONS

- Spillover benefits cause resources to be underallocated. Basic medical research, immunizations.
- Spillover costs cause supply to be higher, price to be lower, and resources to be overallocated. See Chapter 3.
- See Figure 4–1.
- Communities with low tax bases often tax themselves at higher rates to fund their schools, but they still cannot afford to spend as much per student. We need alternative or supplemental ways of funding K–12 education to do that.
- Economic conservatives would reply: vouchers to increase choice and the establishment of magnet and charter schools. Economic liberals might prefer greater subsidies for quality teachers, after-school programs, Head Start, technology purchases, and so on. Unfortunately, better funding for K–12 education is only a partial solution; the problem of poverty must also be addressed.
- Students may have better answers than instructors on this question.
- Student answers will vary.
- Middle and higher-income students. Lower-income students may have had poorer quality K–12 education and they face opportunity costs that they cannot afford in higher education.
- Direct costs = \$40,000, indirect costs = \$56,000, so total cost (opportunity cost) = \$96,000. Net benefit = \$600,000 – \$96,000 = \$504,000. Yes.

10. Student answers will vary.
11. Lowering the price of less popular majors might attract more students into their courses. Raising the price of more popular majors might discourage some students from these courses. The enrollment changes will be small if the demand for particular majors is inelastic.
12. The student and society (but most economists feel the bulk of the benefits are private at the college level). They forgo earnings while they are in school. The value of Pell grants (relative to tuition) to aid low-income students has decreased over time. We have moved to aid packages with more loans and fewer grants, so students shoulder more debt to finance their education than they used to.
13. Student answers will vary.
14. Student activity.
15. Student activity.
16. Student activity.
17. Student activity.

(Appendix 4-2)

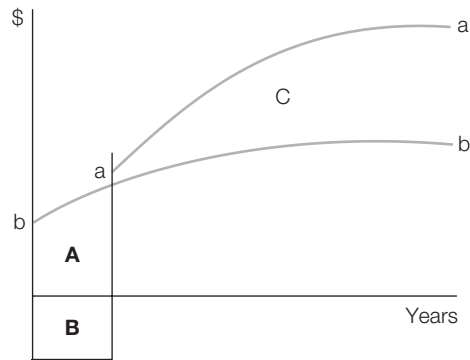
1. Student activity.

SUGGESTED TEST QUESTIONS

Multiple-Choice Questions

1. What is the best example of the indirect costs of college education?
 - a. tuition
 - b. room and board
 - c. forgone earnings from attending school instead of working**
 - d. books, lab fees, and other such items
2. State tax appropriations to public universities:
 - a. benefit mainly low-income students.
 - b. benefit students of all income levels equally.
 - c. mainly benefit middle- and high-income students.**
 - d. are increasing as a percentage of state budgets.
3. A major source of financing for U.S. elementary and secondary public education is:
 - a. the federal property tax.
 - b. the federal income tax.
 - c. the local property tax.**
 - d. the local income tax.
4. The theory of investment in human capital indicates that high-school graduates should:
 - a. go to college if the increased earnings from a college education are greater than the direct costs of college education.
 - b. go to college if the increased earnings from a college education are greater than the sum of the direct and indirect costs of college education.**
 - c. not go to college but invest what they would have spent on education in the stock market.
 - d. go to college whatever the affects on earnings and costs in the short run.

The next six questions refer to the following graph.



5. Lifetime earnings without a college degree are:
 - a. line (curve) aa.
 - b. line (curve) bb.**
 - c. area C.
 - d. the sum of areas A and B.
6. Lifetime earnings with a college degree are:
 - a. line aa.**
 - b. line bb.
 - c. area C.
 - d. the sum of areas A and B.
7. The increase in lifetime earnings from a college education is:
 - a. line aa.
 - b. line bb.
 - c. area C.**
 - d. the sum of areas A and B.
8. The indirect costs of college education are:
 - a. area C.
 - b. area A.**
 - c. area B.
 - d. the sum of areas A and B.
9. The direct costs of college education are:
 - a. area C.
 - b. area A.
 - c. area B.**
 - d. the sum of areas A and B.
10. The student should attend college if:
 - a. the sum of areas A and B is larger than area C.
 - b. area C is larger than the sum of areas A and B.**
 - c. area C is larger than either area A or area B.
 - d. line aa is higher than line bb.

11. Because education has spillover benefits, the private market will:
 - a. **underallocate resources to education.**
 - b. overallocate resources to education.
 - c. produce too much education.
 - d. produce the socially optimum amount of education.

12. John lives at home and is a freshman in junior college. He quit a job that would have paid him \$9,000 for the school year in order to attend full time. His tuition and fees were \$2,000, and his books cost \$200. What did his first year of school cost?
 - a. \$2,700
 - b. **\$11,200**
 - c. \$2,500
 - d. None of the above

13. Proposals to charge higher tuition for more popular college majors are based on the argument that:
 - a. the higher tuition would allow the school to hire more teachers and offer more sections of courses in those majors.
 - b. some students would switch to other, less popular, majors rather than paying higher tuition.
 - c. the school's resource allocation would improve.
 - d. **All of the above**

14. Which country in the Western industrialized world has the lowest (best) primary education pupil per teacher ratio?
 - a. the U.S.
 - b. Norway
 - c. **Denmark**
 - d. Israel

15. What do tuition vouchers, magnet schools, and charter schools have in common?
 - a. **They are all measures that would increase competition in K–12 education.**
 - b. They are all experiments that involve transferring finances from private to public K–12 schools.
 - c. They are all supported by economic liberals.
 - d. They are all opposed by both economic liberals and economic conservatives.

16. The principal problem with financing K–12 education by means of the local property tax is that:
 - a. it causes wasted resources.
 - b. **educational opportunity is not equal throughout the state or country.**
 - c. people who do not have children in local schools still have to pay property taxes.
 - d. low-income children cannot attend school.

17. A major reason that inner-city schools are under-financed is that:
 - a. **they do not have an adequate property tax base.**
 - b. their property tax rate is too low to support quality education.
 - c. taxpayers simply refuse to pay taxes.
 - d. these communities do not care about education.

18. State tax support of K–12 education is generally intended to:
 - a. take over control from local school boards.
 - b. **somewhat equalize spending per student**
 - c. provide equal dollars per student to all school districts.
 - d. None of the above

19. Which of the following countries does *not* have relatively high literacy rates?
- The U.S.
 - Argentina
 - China
 - Burkina Faso**
20. The federal government finances what share of public K–12 education?
- 1%
 - 9%**
 - 40%
 - 60%
21. Economists believe that government subsidies for higher education are justified by:
- greater equity.
 - greater efficiency.
 - spillovers benefits of education to society.
 - All of the above**

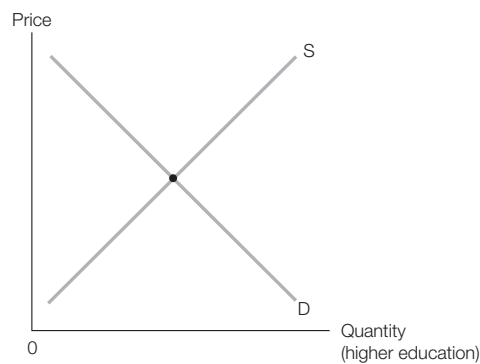
True-and-False Questions

- Data reveal that earnings increase as the level of educational attainment increases. **(T)**
- Most American college students attend private schools. **(F)**
- The average high school drop-out rate is close to 6%. **(T)**
- The U.S. spends the largest share of GDP on public education among Western industrialized countries. **(F)**
- Property tax financing of K–12 education results in relatively equal spending per public school student throughout the United States. **(F)**
- Public elementary and secondary education have substantial spillover benefits. **(T)**
- Magnet schools increase the choices for public school students and their families. **(T)**
- The use of school vouchers could force our public schools to compete with private schools for students. **(T)**
- There is a positive relationship between income and years of education for both men and women. **(T)**
- The federal government provides over 25 percent of the funding for our public K–12 schools. **(F)**
- Supporting public education can be justified by education’s substantial spillover benefits. **(T)**
- The private market overallocates resources to products with substantial spillover benefits. **(F)**
- An important opportunity cost of higher education is forgone earnings from employment while in school. **(T)**
- State tax appropriations for public university systems mainly benefit low-income students. **(F)**
- State tax appropriations for public university systems benefit students of all income levels equally. **(F)**
- Because of U.S. law, racial and ethnic minority students receive the same quality of education as nonminority students. **(F)**
- Donald Trump strongly opposed school vouchers. **(F)**
- Both men and women receive higher earnings as they achieve higher education levels. **(T)**
- Both men and women receive approximately equal earnings for equal levels of education. **(F)**
- Most financial aid is targeted to low income students. **(F)**
- All forms of affirmative action in higher education admissions have been ruled unconstitutional. **(F)**

22. Non-Hispanic white people have the highest bachelor's and Ph.D. attainment among all races and ethnicities. (F)
23. African Americans have the highest 2015 high school dropout rates among all races and ethnicities. (F)
24. Denmark has the highest level of public expenditures on education as a share of GDP among the Western industrialized countries. (T)
25. The U.S. has the lowest (best) pupil to teacher ratio for primary education among the Western industrialized countries. (F)
26. The Supreme Court ruled in the University of Michigan case that a diverse student body has its own benefits. (T)
27. Donald Trump proposed massive increases in educational spending on public schools. (F)

Short-Answer Question

1. The supply and demand graph below is for postsecondary education, which has spillover benefits for society. The demand shown is the private market demand. Draw a socially optimum demand curve and explain how the presence of spillover benefits causes an inefficient allocation of society's resources. (**Demand would increase, as would the allocation of resources to higher education.**)



Critical Thinking Question

We often talk of U.S. public education as a means of achieving equal opportunity for all. Is this entirely true? If you don't think it is entirely true, is it still substantially true? Justify your answer. Regardless of your answer, what do you think is the impact on income distribution in our society?

INTERNET RESOURCES

<http://www.whitehouse.gov>

(Use this website of the President to search for education. You will find a variety of speeches and documents that outline President Barack Obama's education philosophy.)

<http://www.census.gov>

(As usual, the Census Bureau provides a great deal of information on the topic.)

<http://www.ed.gov>

(The Department of Education website is especially useful regarding government education policy.)