

University of Illinois - Department of Economics
Economics 545: Economics of Education, Health and Human Capital
(Also listed under Educational Organization and Leadership 518)

Professor Elizabeth Powers
Fall 2009

Course Objectives

Human capital is the collection of attributes that an individual combines with their own effort to produce output, whether valued explicitly in a formal market or not. Education and health are major determinants of the stock of human capital, but interest is growing in the roles of novel attributes and their possible inputs. This course provides an introduction to the economic theory of human capital and its application in the study of various topics, which may include fertility, discrimination, education, health, and migration. Students will learn the basic theory underlying these topics and various empirical approaches to hypothesis testing.

Class Meetings

Mondays and Wednesdays, 11:00 a.m.-12:20 p.m., 317 David Kinley Hall, August 24, 2009 through December 9, 2009.

Required Course Materials

Book chapters, journal articles, and working papers are assigned. There is no textbook. Most assigned published articles are available in electronic form through the Library Gateway. Assigned working papers are available from the Social Science Research Network or NBER web sites (downloads are free to students with a University of Illinois affiliation). The journals are also available in hardcopy in the library. Book chapters and other harder-to-find items are placed on reserve in the Business & Economics Library. You may need a copy of the software program *Stata*. You can get a student discount if you purchase through the CITES Software WebStore at <http://webstore.uiuc.edu>. Obtain the 'large/intercooled' version (the student version may not be able to handle the assigned data sets).

Other Resources

I strongly recommend the netcourses in the Stata statistical package that are offered by Stata Corporation through its website (www.stata.com).

Course Prerequisites

Completion of the Ph.D. first courses in microeconomics and statistics/econometrics is highly recommended.

Grades

The course grade will be determined by the total points earned over the semester. I use a four-point grading scale with pluses and minuses.

Class Rules

Successful students come to class prepared. Excessive absences will be reported to the college dean, in accordance the Code of Policies and Regulations Applying to All Students (Section 34).

I do not provide opportunities to make up missed exams or assignments. In particular, late assignments will not be accepted and extra credit opportunities will not be extended in lieu of scheduled assignments. Exceptions will be granted only under special circumstances, such as excused medical absences as defined in the Code of Policies and Regulations Applying to All Students (Section 34).

Consistent with University policy, violations of academic integrity will be considered a serious offense. A student who is discovered to have violated academic integrity in this course will be subject to the penalties discussed in Section 33 of the Code of Policies and Regulations Applying to All Students. Examples of penalties which may be imposed include a failing grade for the course.

Collaborative learning activities are encouraged, but activities such as copying from classmates' assignments or plagiarism constitute academic integrity violations. *I do not accept papers and assignments that have been prepared in large part for other courses in fulfillment of assignments for this course.*

Special Needs

Please contact me by the second class if you will require accommodation for special learning needs.

Class Web Site

Your primary source of information about the class is the class web site. Check it frequently for updates and announcements at <https://netfiles.uiuc.edu/epowers/www/Econ545.htm>.

Office Hours and Contact Information

Office hours are on Mondays from 12:30-2:00 p.m., Wednesdays from 12:30-2:00 p.m., and by appointment. My office is in #413 David Kinley Hall. E-mail is the preferred method of first contact for most matters (epowers@uiuc.edu). It is always a good idea to contact me to indicate that you are coming to office hours.

Course Requirements

You will be graded on four types of assignments:

(1) **Two homework assignments.** You will manipulate and analyze data from the Mexican Family Life Study using the *Stata* program.

(2) **Participation in class discussions and two required in-class presentations.** You are expected to read assigned materials before class and arrive prepared for discussion. You will also prepare a brief discussion on your preliminary proposal topic and will give a 15-minute presentation on your final project proposal (see item 3).

(3) **A written paper proposal.** The goal is to develop a well-defined paper topic, convince yourself and others that it is sufficiently interesting for you to devote your time to, and think through potential pitfalls in concept and implementation. *The projects must employ the Mexican Family Life Study.*

(4) **A final exam.** The final will test your understanding of the theory of human capital and your knowledge of the literature.

Summary of Graded Items:

<u>Item</u>	<u>Due Date</u>	<u>Points Possible</u>
Homework #1	10/09/09	75
Homework #2	10/26/09	75
Preliminary proposal presentation	10/14/09	100
Class participation		200
Project proposal and presentations	12/07/09- 12/14/09	300
Final Exam	12/11/09- 12/18/09	250
TOTAL POSSIBLE		1000

Course Outline

- I. Introduction to Human Capital Theory
- II. Parental Investment in Children
 - A. The quantity-quality fertility model
 - B. The investment decision
 - C. Intergenerational income mobility and inequality
- III. Investment in and Returns to Education
 - A. Returns to education: introduction and overview
 - B. Returns to education: early approaches
 - C. Returns to education: twin/sibling models
 - i. Some examples
 - ii. Critiques
 - D. Returns to education: other approaches
 - i. Some examples
 - ii. Critiques
 - E. Returns to education: variation by type of educational institution
 - F. Returns to education: variation by race and sex
- IV. Education Policy: Does Money Matter?
 - A. Introduction
 - B. Money doesn't matter
 - C. Money matters
- V. Health and Human Capital
 - A. The demand for health and health behaviors
 - B. Returns to birthweight
 - C. Economic status and children's health
 - D. Adult disability and earnings
- VI. Towards a general theory of human capital development
 - A. Cognitive and noncognitive factors in the human capital model
 - B. Estimation of the human capital development function

Reading List
Economics 545, Education, Health, and Human Capital
Fall 2006

KEY: *on reserve in undergraduate library; ► required reading.

I. Introduction to human capital theory

► Becker, Gary S., 1993, "Nobel Lecture: The Economic Way of Looking at Behavior," *Journal of Political Economy* 101(3), 385-409.

Gary S. Becker, "Investment in Human Capital: A Theoretical Analysis," 1962. *Journal of Political Economy*, Vol. 70(5, Part 2: Investment in Human Beings; October), 9-49.

II. Parental investment in children

A. The quantity-quality fertility model

► Rosenzweig, Mark R., and Wolpin, Kenneth I., 1980, "Testing the Quantity-Quality Fertility Model: The Use of Twins as a Natural Experiment." *Econometrica* 48(1), 227-40.

► Hanushek, Eric A., 1992, "The Trade-Off between Child Quantity and Quality." *Journal of Political Economy* 100 (February), 84-117.

► Angrist, Joshua D., Victor Lavy, and Analia Schlosser, 2005. "New Evidence on the Causal Link between the Quantity and Quality of Children." NBER Working paper #11835.

*Hotz, V. Joseph, Jacob Alex Klerman, and Robert J. Willis, "The Economics of Fertility in Developed Countries," 1998. Chapter 7 of the *Handbook of Population Economics* (V. 1A), Rosenzweig and Stark, editors.

*Becker, Gary, "The Demand for Children" Chapter 5 in *A Treatise on the Family*.

B. The investment decision

► Behrman, Jere R., Robert A. Pollack, and Paul Taubman, 1982. "Parental Preferences and Provision for Progeny," *Journal of Political Economy* 90(1, Feb.), 52-73.

► Jere R. Behrman, Mark R. Rosenzweig, and Paul Taubman, 1994. "Endowments and the Allocation of Schooling in the Family and in the Marriage Market: The Twins Experiment," *Journal of Political Economy* 102(6, Dec.), 1131-1174.

► Price, Joseph, 2008. "Parent-Child Quality Time: Does Birth Order Matter?" *Journal of Human Resources* 43(1): 240-265.

► McCrary, Justin, and Heather Royer, 2006. "The Effect of Maternal Education on Fertility and Infant Health: Evidence from School Entry Policies Using Exact Date of Birth." NBER Working Paper #12329.

*Becker, Gary, "Family Background and the Opportunities of Children," in *A Treatise on the Family*.

*Behrman, Jere R., "Intrahousehold Distribution and the Family," 1998. Chapter 4 in Volume 1A, *Handbook of Population and Family Economics*, Rosenzweig and Stark, editors. (See especially sections 2.1, 3.2)

C. Intergenerational income mobility and inequality

► Behrman, Jere R., and Paul Taubman, 1990. "The Intergenerational Correlation between Children's Adult Earnings and their Parents' Income: Results from the Michigan Panel Survey of Income Dynamics." *Review of Income and Wealth* 36 (2), 115-27.

► Mazumder, Bhashkar, 2005. "Fortunate Sons: New Estimates of Intergenerational Mobility in the United States Using Social Security Earnings Data." *Review of Economics and Statistics* 87 (2, May), 235-55.

► Oreopoulos, Philip, Page, Marianne E., and Ann Huff Stevens, 2006. "The Intergenerational Effects of Compulsory Schooling." *Journal of Labor Economics* 24(4, October); 729-60.

*Solon, Gary, 1999, "Intergenerational Mobility in the Labor Market," Chapter 29 in *Handbook of Labor Economics*, V. 3a.

III. Investment in and returns to education

A. Returns to education: introduction and overview

► *Card, David, "The Causal Effect of Education on Earnings," 1999. *Handbook of Labor Economics* Volume 3a, Chapter 30.

*Angrist, Joshua D., and Krueger, Alan B., 1999. "Empirical Strategies in Labor Economics," *Handbook of Labor Economics*, Vol. 3, Ashenfelter and Card, eds.

B. Returns to education: early approaches

Griliches, Zvi, and Mason, William M., 1972. "Education, Income and Ability," *Journal of Political Economy* 80(3), Part II, S74-S103.

Griliches, Zvi, 1977. "Estimating the Returns to Schooling: Some Econometric Problems" *Econometrica* 45 (1, Jan.), 1-22.

Cardell, Nicholas Scott, and Hopkins, Mark Myron, 1977. "Education, Income and Ability: A Comment," *Journal of Political Economy* 85 (1, February), 211-215.

Griliches, Zvi, 1977. "Education, Income, and Ability: Rejoinder, *Journal of Political Economy* 85(1), p. 215.

C. Returns to education: twin/sibling models

i. Some examples

► Griliches, Zvi, 1979, "Sibling Models and Data in Economics: Beginnings of a Survey," *The Journal of Political Economy* 87 (5, Part 2: Education and Income Distribution; October), S37-S64.

► Ashenfelter, Orley, and Krueger, Alan, "Estimates of the Economic Return to Schooling from a New Sample of Twins," 1994, *The American Economic Review*, Vol. 84, No. 5. (Dec.), pp. 1157-1173.

Behrman, Jere R., and Mark R. Rosenzweig, 1999. "'Ability' Biases in Schooling Returns and Twins: A Test and New Estimates," *Economics of Education Review* 18(2), 159-67.

ii. Critiques

► Neumark, David, 1999. "Biases in Twin Estimates of the Return to Schooling," *Economics of Education Review* 18, (2, April), 143-48.

► Bound, John, and Solon, Gary, 1999. "Double Trouble: On the Value of Twins-Based Estimation of the Return to Schooling." *Economics of Education Review* 18 (2, April), 169-82.

Rosenzweig, Mark R., and Kenneth I. Wolpin, 2000. "Natural 'Natural Experiments' in Economics," *Journal of Economic Literature* 38 (December), 827-874.

D. Returns to education: other approaches

i. Some examples

Angrist, Joshua D., Krueger, Alan B., 1991, "Does Compulsory School Attendance Affect Schooling and Earnings?" *Quarterly Journal of Economics* v106, n4 (November 1991): 979-1014

Acemoglu, Daron, and Joshua Angrist, 1999. "How Large are the Social Returns to Education? Evidence from Compulsory Schooling Laws." NBER Working Paper #W7444 (October). Also appears in *Recent Developments in Growth Theory, Volume 1: Empirical Patterns*, 2004, pp. 387-437. Elgar Reference Collection, International Library of Critical Writings in Economics, Vol. 179, Chettenham, U.K., and Northampton, Mass., Elgar.

Moretti, Enrico, 2004, "Estimating the Social Return to Higher Education: Evidence from Longitudinal and Repeated Cross-Sectional Data." *Journal of Econometrics* 121, 175-212.

*Card, David, "Earnings, Schooling, and Ability Revisited," *Research in Labor Economics* 14 (1995), 23-48.

ii. Critiques

► Bound, John, David A. Jaeger, and Regina M. Baker, 1995. "Problems with Instrumental Variables Estimation When the Correlation between the Instruments and the Endogenous Explanatory Variable Is Weak." *Journal of the American Statistical Association* 90(430, June), 443-50.

Bound, John, and Alan Krueger, 1991. "The Extent of Measurement Error in Longitudinal Earnings Data: Do Two Wrongs Make a Right?" *Journal of Labor Economics* 9, 1-24.

E. Returns to education: variation by type of educational institution

► Kane, Thomas J., and Cecilia Elena Rouse, 1995. "Labor Market Returns to Two and Four-year College." *American Economic Review* 85 (3), 600-614.

► Brewer, Dominic J., Eric R. Eide, and Ronald G. Ehrenberg, 1999. "Does It Pay to Attend an Elite Private College? Cross-Cohort Evidence on the Effects of College Type on Earnings" *Journal of Human Resources* 34, (1, Winter), 104-23

F. Returns to education: variation by race and sex

► Card, David, and Alan B. Krueger, 1992. "School Quality and Black-White Relative Earnings: A Direct Assessment," *Quarterly Journal of Economics* 107 (February) 151-200.

* Cain, Glen G., "The Economic Analysis of Labor Market Discrimination: A Survey" *Handbook of Labor Economics* Volume 1, Chapter 13.

**Handbook of Labor Economics* Volume 3c, Chapter 48, "Race and Gender in the Labor Market" Joseph G. Altonji and Rebecca M. Blank, 1999.

IV. Education Policy: Does Money Matter?

Syllabus, Economics 545 (Powers, Fall 2009).

Last updated November 30, 2009

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A. Introduction

*Burtless, Gary, 1996, Introduction and Summary, *Does Money Matter? The Effect of School Resources on Student Achievement and Adult Success* (Brookings Institution Press, Washington, DC).

B. Money doesn't matter

► Angrist, Joshua, and Guryan, Jonathan, 2003, "Does Teacher Testing Raise Teacher Quality? Evidence from State Certification Requirements." NBER Working Paper #w9545 (March).

Hanushek, Eric A., 1996, "School Resources and Student Performance," Chapter 2 in *Does Money Matter? The Effect of School Resources on Student Achievement and Adult Success* (Brookings Institution Press, Washington, DC).

Ballou, Dale, 1996, "Do Public Schools Hire the Best Applicants?" *Quarterly Journal of Economics* (February)

Hanushek, Eric A., Kain, John F., and Rivkin, Steven G., 1999, "Do Higher Salaries buy Better Teachers?" NBER Working Paper 7082 (April).

C. Money matters

Card, David, and Alan B. Krueger, 1992a, "Does School Quality Matter? Returns to Education and the Characteristics of Public schools in the United States," *Journal of Political Economy* 100 (February): 1-40.

► Betts, Julian R., 1995, "Does School Quality matter? Evidence from the National Longitudinal Survey of Youth." *Review of Economics and Statistics* 77 (May): 231-50.

► Angrist, Joshua, and Victor Lavy, 1999, "Using Maimonides' Rule to Estimate the Effect of Class Size on Scholastic Achievement," *Quarterly Journal of Economics* (May).

► Imbens, Guido, and Thomas Lemieux, 2007, "Regression Discontinuity Design: A Guide to Practice." NBER Working Paper #13039 (April).

Card, David, and A. Abigail Payne, 2002, "School Finance Reform, the Distribution of School Spending, and the Distribution of Student Test Scores." *Journal of Public Economics* 83 (1, January), 49-82.

Loeb, Susanna, and Marianne E. Page, 2000, "Examining the Link between Teacher Wages and Student Outcomes: The Importance of Alternative Labor Market Opportunities and Non-Pecuniary Variation." *The Review of Economics and Statistics* 82(3), 393-408.

V. Health and Human Capital

A. The Demand for health and health behaviors

▶ Grossman, 1972, "On the Concept of Health Capital and the Demand for Health." *Journal of Political Economy* 80: 223-255.

▶ Becker, Gary S., and Murphy, Kevin M., 1988, "A Theory of Rational Addiction." *Journal of Political Economy* 96 (4) (August), 675-700.

Becker, Gary S., Michael Grossman, and Kevin M. Murphy, 1991, "Rational Addiction and the Effect of Price on Consumption." *American Economic Review* v81, n2 (May): 237-41

Becker, Gary S., Grossman, Michael, and Murphy, Kevin M., 1994, "An Empirical Analysis of Cigarette Addiction." *American Economic Review* v84, n3 (June): 396-418

▶ Gruber, Jonathan, and Koszegi, Botond, 2001, "Is Addiction "Rational"? Theory and Evidence." *Quarterly Journal of Economics* 116 (4) (November), 1261-1303.

B. Returns to birthweight

▶ Janet Currie and Enrico Morretti, "Biology as Destiny? Short- and Long-Run Determinants of Intergenerational Transmission of Birth Weight." 2007. *Journal of Labor Economics* 25(2, April).

▶ Behrman, Jere, F., and Mark R. Rosenzweig, 2004. "Returns to Birthweight." *Review of Economics and Statistics* 86 (2, May), pp. 586-601.

▶ Almond, Douglas, Chay, Kenneth Y., and David S. Lee, "The Costs of Low Birth Weight." 2005. *Quarterly Journal of Economics* (3, August).

▶ Royer, Heather, "Separated at Girth: U.S. Twin Estimates of the Effects of Birth Weight." 2009. *American Economic Journal: Applied Economics* (1, January), pp. 49-85.

C. Economic status and children's health

▶ Case, Anne, Darren Lubotsky, and Christina Paxson, 2002. "Economic Status and Health in Childhood: The Origins of the Gradient." *American Economic Review* 92 (5), 1308-34.

▶ Currie, Janet and Rosemary Hyson, 1999. "Is the Impact of Health Shocks Cushioned by Socioeconomic Status? The Case of Low Birthweight." *American Economic Review* 89 (2), pp. 245-50.

*Wolpin, Kenneth I., 1997, "Determinants and Consequences of the Mortality and Health of infants and Children." *Handbook of Population and Family Economics Vol 1A*. Rosenzweig and Stark, editors. 484-555.

C. Adult disability and earnings

Stern, Steven, 1989. "Measuring the Effect of Disability on Labor Force Participation." *Journal of Human Resources* 24 (3, Summer), pp. 361-95.

Butler, S., Richard V. Burkhauser, Jean M. Mitchell, Theodore P. Pincus, 1987. "Measurement Error in Self-Reported Health Variables," *The Review of Economics and Statistics*, Vol. 69, No. 4. (Nov.), pp. 644-650.

Kreider, Brent, 1999. "Latent Work Disability and Reporting Bias" *Journal of Human Resources* v34, n4 (Fall 1999): 734-69.

VI. Towards a theory of general human capital development

A. Cognitive and noncognitive factors in the human capital model

- ▶ Cunha, Flavio, and James J. Heckman, 2007, "The Technology of Skill Formation"
- ▶ Cunha, Flavio, Heckman, James J., Lochner, Lance, and Dimitriy V. Masterov, "Interpreting the Evidence on Life Cycle Skill Formation." 2005. NBER Working Paper #11331.

B. Estimating of the human capital development function

- ▶ Todd, Petra E., and Kenneth I. Wolpin. 2003. "[On the Specification and Estimation of the Production Function for Cognitive Achievement](#)." *Economic Journal* (113, February): pp. F3-33.
- ▶ Cunha, Flavio, and James J. Heckman, 2008, "Formulating, Identifying and Estimating the Technology of Cognitive and Noncognitive Skill Formation." *Journal of Human Resources* (43, Fall): 738-82.