

Labor 3: Human Capital and the Economics of Education-spring 2025

Syllabus for 2025. This course will cover three areas: (i) human capital investments and intergenerational mobility, (ii) educational production, and (iii) governance of and markets for education and schooling. In each of these segments, theoretical perspectives and empirical work will be presented.

Examination

This course will be graded as pass or fail. To obtain a passing grade in this course, students must:

1. Write three referee reports on an academic paper; one for each part of the course.
2. Present one academic paper during class.
3. Present a research proposal during a workshop at the end of the course.
4. Attend a minimum of 9 lectures.

Instructors

Assistant Prof. Marie-Pascale Grimon, SOFI, SU

Assistant Prof. José Montalban Castilla, SOFI, SU

Prof. Jonas Vlachos, Department of Economics, SU

Lectures

Part 1: Marie-Pascale Grimon (5 classes)

Human capital

Non-cognitive skills and health

The timing of investments

Parents and the Family

Intergenerational mobility

Part 2: José Montalbán Castilla (4 classes)

Returns to education and field of study

Class size effects

Peer effects in education

Teacher quality and teacher-related policies

Part 3: Jonas Vlachos (4 classes)

School finance and accountability

The market for education

School choice mechanisms

School management and school policies

Reading list

Starred * articles are required reading

Articles with RR can be chosen to write a referee report on.

Articles with SP can be chosen for your student presentation.

Books

Cahuc, Pierre and André Zylberberg (2014), *Labor Economics* (2nd edition), MIT Press.

(Can be downloaded as an E-book from SU's library)

Neal, Derek (2018), *Information, Incentives, and Education Policy*, Harvard University Press

Class 1 – Human Capital Introduction

The first class simply entitled “Human Capital” starts by explaining what economists mean by this term, and covers briefly signaling theory (Spence, 1973) as part of this. Most of the lecture is then spent on an introduction to the Roy Model, as a fundamental model for how humans might differentially select to invest in skills, which leads us to discuss selection bias, Heckman selection and to go over econometric ways of estimating marginal treatment effects.

*A. Roy. (1951) "Some Thoughts on the Distribution of Earnings" *Oxford Ec Papers*, 235-246.

*Andresen, M. E. (2018). "Exploring Marginal Treatment Effects: Flexible Estimation Using Stata." *The Stata Journal*, 18(1), 118-158.

A.M. Spence. (1973) "Job Market Signaling," *Quarterly Journal of Economics* 87 (Aug), 355-74.

J. Heckman and G. Sedlacek. (1985) "Heterogeneity, Aggregation, and Market Wage Functions: An Empirical Model of Self-selection in the Labor Market," *JPE* 93(6), 1077-1125

F. Cunha and J. Heckman. (2007). "The Technology of Skill Formation," *AER* 97 (May), 31-47.

Class 2 – Non-cognitive skills and health

The second lecture covers then two margins of human capital that have received recent attention: non-cognitive skills and health. We review how non-cognitive skills have been measured, and their returns. We discuss Alan and Mumcu (2024) on measuring and enhancing child non-cognitive skills. Tying non-cognitive skills to health, we then go over the original Grossman (1972) model of health as human capital, review empirical evidence on whether health is human capital, touch upon nature vs nurture debates with a short discussion of epigenetics. Finally, we go over a simplified Heckman (2007) human capital production function and inter-temporal investments where health can be viewed as a prerequisite for human capital production.

*Currie, Janet. "Child health as human capital". *Health Economics*. 2020 Apr;29(4):452-463.

*Alan, Sule, and Ipek Mumcu. (2024) "Nurturing Childhood Curiosity to Enhance Learning: Evidence from a Randomized Pedagogical Intervention", *American Economic Review*.

(SP) Baranov, Victoria, Sonia Bhalotra, Pietro Biroli, and Joanna Maselko. 2020. "Maternal Depression, Women's Empowerment, and Parental Investment: Evidence from a Randomized Controlled Trial." *American Economic Review*, 110 (3): 824–59.

(SP) Braghieri, Luca, Ro'ee Levy, and Alexey Makarin. 2022. "Social Media and Mental Health." *American Economic Review*, 112 (11): 3660–93.

(SP) J. Heckman and T. Kautz. (2012) "Hard Evidence on Soft Skills," *Labour Economics*, 19(4): 451-64.

(RR) Sule Alan, Michela Carlana, and Marinella Leone. Inclusive Teaching: Spotting Social Isolation in the Classroom. Working paper. September 6, 2024

Christina Brown, Supreet Kaur, Geeta Kingdon, Heather Schofield, Cognitive Endurance as Human Capital, *The Quarterly Journal of Economics*, 2024.

Edin, Per-Anders, Peter Fredriksson, Martin Nybom, and Björn Öckert. 2022. "The Rising Return to Noncognitive Skill." *American Economic Journal: Applied Economics*, 14 (2): 78-100.

Grossman, M. (2000). The Human Capital Model. *Handbook of Health Economics*, 1, 347-408.

Melvin Stephens, Melvin and Desmond Toohey, "The Impact of Health on Labor Market Outcomes: Evidence from a Large-Scale Health Experiment," *AEJ Applied*, July 2022.

Class 3 – Timing of Investments and the Importance of Early-Life

In the third class, we discuss the timing of investments: when should investments in human capital be made? We start by discussing the fetal origins hypothesis (Almond and Currie, 2011), the dynamic life cycle model, and the famous Heckman curve (2006). We then discuss empirical evidence on the Heckman curve and in so doing review ways of measuring the effectiveness of policies: cost-benefit, cost-effectiveness, surrogate indices, net social benefits and the marginal value of public funds or MVPFs which we review using Hendren and Sprung-Keyser (2020). Finally, we discuss how gaps between children early on in life, and are present already at the start of school, and some of the early childhood interventions that have been implemented to try to remediate this.

*Almond, Douglas, and Janet Currie. "Killing Me Softly: The Fetal Origins Hypothesis." *The Journal of Economic Perspectives* 25, no. 3 (2011): 153-72.

(SP) Raj Chetty, Nathaniel Hendren, The Impacts of Neighborhoods on Intergenerational Mobility I: Childhood Exposure Effects, *The Quarterly Journal of Economics*, Volume 133, Issue 3, August 2018, Pages 1107–1162.

(SP) Ben Sprung-Keyser and Sonya Porter. The Economic Geography of Lifecycle Human Capital Accumulation: The Competing Effects of Labor Markets and Childhood Environments, January 2024

(RR) John A. List & Haruka Uchida. Here Today, Gone Tomorrow? Toward an Understanding of Fade-out in Early Childhood Education Programs. NBER Working Paper 33027. DOI 10.3386/w33027, October 2024.

(RR) Carneiro, Pedro, Kjell Salvanes, Barton Willage and Alexander Willén (2023) "The Timing of Parental Job Displacement, Child Development and Family Adjustment". [Working paper](#).

Chetty, Raj, Nathaniel Hendren, Frina Lin, Jeremy Majerovitz, and Benjamin Scuderi. 2016. "Childhood Environment and Gender Gaps in Adulthood." *American Economic Review*, 106 (5): 282-88.

Hendren, Nathaniel, and Ben Sprung-Keyser. 2020. "A Unified Welfare Analysis of Government Policies." *Quarterly Journal of Economics* 135 (3): 1209-1318.

List, John A., Ragan Petrie, and Anya Samek. 2023. "How Experiments with Children Inform Economics." *Journal of Economic Literature*, 61 (2): 504-64.

Bharadwaj, Prashant, Katrina Loken, and Christopher Nielson. (2013) "Early Life Health Interventions and Academic Achievement," *American Economic Review*, 103 #5, 1862-1891.

Gertler, P., Heckman, J., Pinto, R., Zanolini, A., Vermeersch, C., Walker, S., ... Grantham-McGregor, S. (2014). "Labor market returns to early childhood stimulation: A 20-year Follow-up to an experimental intervention in Jamaica." *Science*, 344(6187), 998–1001.

Baird, Sarah, Joan Hamory Hicks, Michael Kremer, Edward Miguel, 2016. "Worms at Work: Long-run Impacts of a Child Health Investment," *The Quarterly Journal of Economics*, vol 131(4), pages 1637-1680.

Akresh, Richard, Sonia Bhalotra, Marinella Leone and Una Osili, "First- and Second-Generation Impacts of the Biafran War", *Journal of Human Resources*, March 2023, 58 (2) 488-531.

Class 4 – Parents and the Family

This class will cover the role of parents for human capital investments, including discussing the role of parent beliefs, parenting styles and household shocks. We will also discuss negative human capital investments with child maltreatment. Time permitting, we may cover the influence of siblings and fertility.

* M. Carlana and L. Corno. Thinking about Parents: Gender and Field of Study. *AEA Papers and Proceedings*, Volume 114, 2024.

* Marie-Pascale Grimon. Effects of the Child Protection System on Parents. Working paper 2024.

(SP) Pedro Carneiro, Emanuela Galasso, Italo Lopez Garcia, Paula Bedregal, and Miguel Cordero. Impacts of a Large-Scale Parenting Program: Experimental Evidence from Chile. *Journal of Political Economy* 2024 132:4, 1113-1161.

(SP) List, J.A., Pernaudet, J. & Suskind, D.L. Shifting parental beliefs about child development to foster parental investments and improve school readiness outcomes. *Nature Communications* 12, 5765 (2021).

(RR) Janet Currie, N. Meltem Daysal, Mette Gørtz & Jonas Cuzulan Hirani. Child Disability and Effects on Sibling Mental Health. NBER Working Paper 33303. DOI 10.3386/w33303. December 2024.

Kimberly Dadisman, Andre Nickow & Philip Oreopoulos. The Impact of Early Childhood Parenting Interventions on Child Learning: A Systematic Review and Meta-Analysis. NBER Working Paper 32959, DOI 10.3386/w32959, September 2024.

Orazio Attanasio et al. Parental Investments and Skills Formation During Infancy and Youth: Long Term Evidence From an Early Childhood Intervention. NBER Working Paper 32851. DOI 10.3386/w32851, August 2024.

Jonas Tungodden and Alexander Willén. When Parents Decide: Gender Differences in Competitiveness. *Journal of Political Economy* 2023 131:3, 751-801.

Matthias Doepke, Fabrizio Zilibotti, The role of parenting in child development, *Oxford Open Economics*, Volume 3, Issue Supplement_1, 2024, Pages i741–i748.

Class 5 – Intergenerational mobility

The final lecture in the first part of the course will explain why economists are interested in intergenerational mobility and cover a history of models on the topic. We will review the ways that economists have measured it with a discussion of classical measurement error for both attenuation bias and life-cycle bias, and latent variables. We will discuss the Great Gatsby curve (Corak 2013) and some of the recent directions of research in top journals on the topic with a long discussion of the Nybom and Stuhler (2024).

*Nybom, Martin and Jan Stuhler (Forthcoming) "Interpreting Trends in Intergenerational Mobility". *Journal of Political Economy*

(SP) Collado, M Dolores, Ignacio Ortuño-Ortín, and Jan Stuhler (2023). "Estimating Intergenerational and Assortative Processes in Extended Family Data", *The Review of Economic Studies*, Volume 90, Issue 3, May 2023, Pages 1195–1227.

(RR) Jacome, Kuziemko & Naidu (2023) "Mobility for All: Representative Intergenerational Mobility Estimates over the 20th Century", [working paper](#).

(RR) Engzell, Per and Nathan Wilmers (2023) "Firms and the Intergenerational Transmission of Labor Market Advantage" <https://osf.io/preprints/socarxiv/mv3e9> (economics and sociology)

Persson, Petra, and Maya Rossin-Slater. 2018. "Family Ruptures, Stress, and the Mental Health of the Next Generation." *American Economic Review*, 108 (4-5): 1214-52.

Adermon, Adrian, Mikael Lindahl, and Mårten Palme. 2021. "Dynastic Human Capital, Inequality, and Intergenerational Mobility." *American Economic Review*, 111 (5): 1523-48.

Abramitzky, Ran, Leah Boustan, Elisa Jacome, and Santiago Perez. 2021. "Intergenerational Mobility of Immigrants in the United States over Two Centuries." *American Economic Review*, 111 (2): 580-608.

Attanasio, Orazio, Áureo de Paula and Alessandro Toppeta. (2023) "Intergenerational Mobility in Socio-emotional Skills". Working paper.

Lecture 6: Returns to education and to field of study

The lecture "Returns to Education and Field of Study" focuses on the economic evaluation of education's impact on earnings. It discusses theoretical models, like the Card model, to explain differences in educational attainment and returns. Methods to estimate returns, such as twin studies and instrumental variables, address biases in causality. The lecture also highlights how fields of study and educational quality influence earnings and explores future research on market failures, externalities, and non-monetary returns to education. The overarching goal is to link human capital theory with real-world policy implications

*Cahuc, Pierre and André Zylberberg (2014) "Education and Human Capital," Chapter 4 in *Labor Economics*, MIT Press. (Can be downloaded as an E-book from SU's library)

*Card, David (1999) "The causal effects of education on earnings," Chapter 30 in Ashenfelter, O. and Card, D. (eds.), *Handbook of Labor Economics* vol. 3A, Amsterdam: Elsevier Science/North-Holland.

*Altonji, J.G., P. Arcidiacono, and A Maurel (2016) "The analysis of field choice in college and graduate school: Determinants and wage effects," in *Handbook of the Economics of Education*, Elsevier, vol. 5, 305-396.

(RR/SP) Meghir, Costas and Mårten Palme (2005) "Educational Reform, Ability and Parental Background," *American Economic Review* 95(1), 414-424.

(RR/SP) Kirkeboen, Lars J., Edwin Leuven and Magne Mogstad (2016) "Field of Study, Earnings, and Self-Selection," *The Quarterly Journal of Economics* 131(3), 1057–1111.

Lecture 7: Class size effects

The lecture "Class Size effects" explores the causal relationship between class size and student outcomes. It examines mechanisms through which class size affects learning and highlights empirical methods like randomized controlled trials (e.g., the STAR project), instrumental variables, and regression discontinuity design to address biases. Studies show mixed results on class size impacts, with some evidence of short-term academic gains and long-term economic benefits, though cost-effectiveness remains debated. The discussion extends to parental and teacher responses to class-size changes and future research directions in educational production functions and policy design.

* Angrist, J.D. and Pischke, J., 1999. Using Maimonides' rule to estimate the effect of class size on scholastic achievement. *The Quarterly Journal of Economics*, 114(2), pp.533-575.

Hoxby, C. M. (2000). The effects of class size on student achievement: New evidence from population variation. *The Quarterly Journal of Economics*, 115(4), 1239-1285.

Raj Chetty & John N. Friedman & Nathaniel Hilger & Emmanuel Saez & Diane Whitmore Schanzenbach & Danny Yagan, 2011. "How Does Your Kindergarten Classroom Affect Your Earnings? Evidence from Project Star," *The Quarterly Journal of Economics*, Oxford University Press, vol. 126(4), pages 1593-1660

*Fredriksson, P., Öckert, B. and Oosterbeek, H., 2013. Long-term effects of class size. *The Quarterly Journal of Economics*, 128(1), pp.249-285.

*Leuven, E., & Løkken, S. A. (2020). Long-Term Impacts of Class Size in Compulsory School. Forthcoming, *Journal of Human Resources* 55 (1). (2020). 309-348.

(RR) Adusumilli, K., Agostinelli, F., & Borghesan, E. (2024). "Heterogeneity and Endogenous Compliance: Implications for Scaling Class Size Interventions" (No. w32338). National Bureau of Economic Research.

(SP) Peter Fredriksson & Björn Öckert & Hessel Oosterbeek, 2016. "Parental Responses to Public Investments in Children: Evidence from a Maximum Class Size Rule," *Journal of Human Resources*, vol. 51(4), pages 832-868.

(SP) Leuven, E., & Løkken, S. A. (2020). Long-Term Impacts of Class Size in Compulsory School. Forthcoming, *Journal of Human Resources* 55 (1). (2020). 309-348.

Lecture 8: Peer effects in education

The lecture "Peer Effects in education" examines how peers influence educational outcomes and identifies causal mechanisms through experimental and non-experimental designs. It discusses the challenges of endogeneity, self-selection, and reflection in peer group studies. Key topics include the effects of disruptive peers, gender composition, and rank on student outcomes. Empirical studies, such as randomized controlled trials and natural experiments, explore peer

configurations' impacts. The lecture emphasizes heterogeneity and non-linearities in peer effects and suggests caution in applying findings for policy due to complex social dynamics.

*Manski, C. F. (1993). Identification of endogenous social effects: The reflection problem. *The Review of Economic Studies*, 60(3), 531-542.

Carrell, S.E., Fullerton, R.L. and West, J.E., 2009. Does your cohort matter? Measuring peer effects in college achievement. *Journal of Labor Economics*, 27(3), pp.439-464.

*Duflo, E., Dupas, P., & Kremer, M. (2011). Peer effects, teacher incentives, and the impact of tracking: Evidence from a randomized evaluation in Kenya. *American Economic Review*, 101(5), 1739-74.

Carrell, S. E., Sacerdote, B. I., & West, J. E. (2013). From natural variation to optimal policy? The importance of endogenous peer group formation. *Econometrica*, 81(3), 855-882.

*Booij, Adam S. Edwin Leuven, Hessel Oosterbeek; Ability Peer Effects in University: Evidence from a Randomized Experiment, *The Review of Economic Studies*, Volume 84, Issue 2, 1 April 2017, Pages 547–578

(RR) Isphording I., & Zölitz, U. (2019). The value of a peer.

(SP) Carrell, S.E., and M.L. Hoekstra. 2010. "Externalities in the Classroom: How Children Exposed to Domestic Violence Affect Everyone's Kids." *American Economic Journal: Applied Economics* 2:211–228.

(SP) Murphy, R., & Weinhardt, F. (2018). Top of the class: The importance of ordinal rank. *The Review of Economic Studies* (accepted)

Lecture 9: Measuring Teacher Effectiveness

The lecture "Teacher Quality: Labor III – Human Capital and the Economics of Education" focuses on evaluating the impact of teacher effectiveness on student outcomes. It introduces methodologies like Value-Added Models (VAM) to quantify teacher contributions and discusses biases and precision challenges in such estimates. Evidence indicates that teacher quality significantly influences both short-term academic achievements and long-term outcomes such as college attendance and earnings. While traditional teacher characteristics are poor predictors of effectiveness, experience and contextual factors play a role. The lecture emphasizes the need for robust evaluation frameworks and research to refine teacher-effect measurement and its implications for educational policies.

Hanushek, E. A., & Rivkin, S. G. (2006). Teacher quality. *Handbook of the Economics of Education*, 2, 1051-1078.

*Jackson, C. K., Rockoff, J. E., & Staiger, D. O. (2014). Teacher effects and teacher-related policies. *Annual Review of Economics*, 6(1), 801-825.

Kane, T. and D. Staiger (2008), Estimating Teacher Impacts on Student Achievement: An Experimental Evaluation, *NBER Working Paper* 14607.

*Rothstein, J. (2010). Teacher quality in educational production: Tracking, decay, and student achievement. *The Quarterly Journal of Economics*, 125(1), 175-214.

*Chetty, R., Friedman, J. N., & Rockoff, J. E. (2014). Measuring the impacts of teachers I: Evaluating bias in teacher value-added estimates. *American economic review*, 104(9), 2593-2632.

* Chetty, R., Friedman, J.N. and Rockoff, J.E., 2014. Measuring the impacts of teachers II: Teacher value-added and student outcomes in adulthood. *The American Economic Review*, 104(9), pp.2633-2679.

C. Kirabo Jackson (2018) What Do Test Scores Miss? The Importance of Teacher Effects on Non–Test Score Outcomes, *Journal of Political Economy* 126:5, 2072-2107

(RR) Bitler, M., Corcoran, S. P., Domina, T., & Penner, E. K. (2021). Teacher effects on student achievement and height: A cautionary tale. *Journal of research on educational effectiveness*, 14(4), 900-924.

(SP) Chetty, R., Friedman, J.N. and Rockoff, J.E., 2014. Measuring the impacts of teachers II: Teacher value-added and student outcomes in adulthood. *The American Economic Review*, 104(9), pp.2633-2679.

(SP) C. Kirabo Jackson (2018) What Do Test Scores Miss? The Importance of Teacher Effects on Non–Test Score Outcomes, *Journal of Political Economy* 126:5, 2072-2107